DOCUMENT RESUME

ED 154 796 IR 005 872

AUTHOR Chambers, Jack A.
TITLE The ABC's of CAI. A Handbook for Faculty. Second Edition, 1977-78.
INSTITUTION California State Univ., Fresno.
PUB DATE 78
NOTE 109p.

EDRS PRICE MF-$0.83 HC-$6.01 Plus Postage.
DESCRIPTORS Annotated Bibliographies; *Catalogs; College Faculty; *Computer Assisted Instruction; Computer Programs; Educational Resources; *Higher Education; Manuals; Organizations (Groups); Professional Associations; Program Descriptions; *Programed Materials
IDENTIFIERS BASIC Programing Language; Computer Software

ABSTRACT

Information for college faculty members provided by this handbook on computer assisted instruction (CAI) includes (1) CAI sites to visit, (2) a reading list, (3) CAI related organizations, (4) courseware sources, (5) CAI conference calendar, 1977-78, and (6) resource persons in a variety of disciplines. Appended is a catalog of CAI courseware available from California State University at Fresno. Program abstracts are provided for those programs given a high rating by faculty evaluators. These programs have been completely rewritten in a structured BASIC, documented, and tested. (Author/STS)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED154796

U S DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

THE ABC's OF CAI

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Jack A. Chambers

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC) AND USERS OF THE ERIC SYSTEM."

A HANDBOOK FOR FACULTY

SECOND EDITION, 1977-78

Developed by the

CENTER FOR INFORMATION PROCESSING
California State University, Fresno

Jack A. Chambers, Director
Jerry W. Sprecher, Manager
E. M. Green, Acting Assistant Director
for Instruction/Research

IR005 872

TABLE OF CONTENTS

	Page
Introduction	iii
CAI Sites to Visit	1
CAI Reading List	5
CAI Organizations	8
CAI Courseware Sources	10
CAI Conference Calendar	11
CAI Resource Persons	13
Appendix - CSUF Catalog of Courseware	19

INTRODUCTION

Over the past few years one of the most consistent requests heard from faculty has been the need for more information about computer assisted instruction. How do you get started? Where are good courseware programs available? Who can I talk to about using the computer in the classroom in my field?

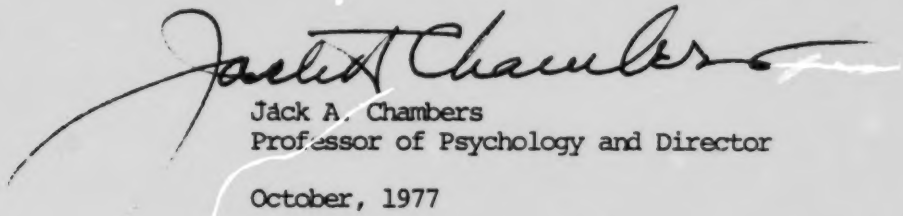
To try and answer some of these questions, the CSUF Center for Information Processing developed and published the first edition of The ABC's of CAI last year. This CAI Handbook was so well received that the decision was made to update the manual and publish a second edition this year.

So here it is. Similar to last year's, the Handbook contains information about CAI centers to visit, relevant books, periodicals, and organizations, places to acquire courseware, and a 77-78 calendar of CAI related conferences. Again, the Handbook includes a list of persons knowledgeable in CAI use in higher education, all of whom have cheerfully (!) agreed to answer CAI-related questions from interested faculty.

Finally, the latter half of the Handbook contains the 77-78 edition of the CSUF Catalog of Instructional Courseware. As was true of the 76-77 edition, the courseware is listed by field, and the primary listing includes only those programs which have been evaluated and given a high rating by the CSUF faculty. And, as before, the programs have been rewritten in a very basic BASIC, in a structured format. They should be easy to modify to fit a given learning

situation, and with little effort should be able to be run on almost any mini or larger computer which supports a BASIC compiler. Best of all, the number of such programs listed in the catalog has more than doubled since last year, with a significant number of diverse fields covered.

The Center will be happy to supply a tape of all programs listed in the main section of the Catalog to any interested university, college, or secondary school. The rest is up to you. Good Luck!



Jack A. Chambers
Professor of Psychology and Director

October, 1977

ACKNOWLEDGEMENT

Many thanks are due to Dutch Green, David Moor, Carol Moore, Marilyn Meyers, John Howard, and Jerry Sprecher of the Center staff for their help in the preparation of the ABC's materials, and to Dianne Wear, Mary Smith, and Rose Marie Ramirez for their help in the preparation of the final manuscript. Appreciation is also extended to Al Bork of UC Irvine, Gene Geisler of San Francisco State University, and to Herb Peckham of Gavilan College, for their suggestions and advice in relation to the preparation of the original edition of the Handbook. In addition, grateful appreciation goes to all of the CSUF faculty members who served as courseware evaluators, and to faculty members throughout the state who consented to be listed as resource persons.

Finally, many, many thanks are due to the Center's ever hard-working student assistants who, through blood, sweat, tears, and groans, managed to help transform a large number of "spaghetti bowls" into well structured, "top down" BASIC programs. Written in letters of fire on these courseware programs are the names of John Bengtson, Lauren Burchette, Bosco Dias, Gwen Gee, Ray Gretlein, Craig Hauschildt, Deborah Patrick, and Mike Watts.

JAC

CAI SITES TO VISIT

Claremont Colleges, Seaver Computer Center, Claremont, California 91711

Hardware: Digital Equipment DEC-10

Languages: BASIC, APL

Courseware: Tutorial

Have written extensive materials for languages, including French, German and Spanish. Scope of materials ranges from vocabulary building to sentence structures and conversation in the particular language.

Contact: Cecilia Baumann, Director, Oldenborg Center for Modern Languages and International Relations - (714) 626-8511, Ext. 3202

Coast Community College District, Information Services, 2701 Fairview Road, Costa Mesa, California 92626

Hardware: IBM 155/2

Language: APL

Courseware: Games, simulations, tutorials, drill and practice, problem solving, in most disciplines.

Contact: Monte Ruth - (714) 556-5630

Gavilan College, Computer Services, 5055 Santa Teresa, Gilroy, CA 95020

Hardware: HP 2000 Access

Language: BASIC

Courseware: Problem Solving

Physics (first two years), Engineering (graphics, circuits), Math (linear algebra), Chemistry (simulation, organic analysis)

Contact: Herb Peckham - (408) 847-1400, Ext. 387

Los Angeles City School District, Education Systems and Programming Branch, 450 North Grand Avenue, G372, Los Angeles, California 90012

Hardware: Six HP 2000 C Prime, one 2000 Access, one 2000 Timesharing

Courseware: Primarily HP supplied User Library

Contact: Dr. Toggenburger - (213) 625-4919

Modesto Junior College, College Avenue, Modesto, California 95350

Hardware: HP 2000 Access

Languages: BASIC, FINDIT

Courseware: Tutorials in English grammar, Psychology pre-tests and post-tests, Agriculture (land-leveling)

Contact: Nels Overgaard - (209) 526-2000, Ext. 492

Santa Rosa Junior College, Data Processing, 1501 Mendocino Avenue, Santa Rosa, California 95401

Hardware: HP 3000 Series 2

Languages: BASIC, FORTRAN

Courseware:

Biology: Simulations, games, problem solving

Contact: Dr. Charles Brown - (707) 527-4320

Chemistry: Simulations, problem solving, exam generation

Contact: Courtenay Anderson - (707) 527-4284

Math: Programs in calculus to graph functions

Contact: Clyde Russel - (707) 527-4356

Stanford University, Institute for Mathematical Studies in the Social Sciences, Ventura Hall, Stanford, California 94305

Hardware: PDP 10

Languages: SAIL (an extension of ALGOL), LISP

Courseware: Tutorial, problem solving

University Level Philosophy and Computer Science

Contact: Patrick Suppes - (415) 497-3111

University of California, Berkeley, Lawrence Hall of Science, Berkeley, California 94720; Telephone: (415) 642-5132

Hardware: Three Data General Machines, including a Nova and Eclipse

Languages: BASIC, PILOT

Major Projects:

Outreach to Schools:

Provides computer services to local school districts, from pre-school to university level.

Contact: Lee Berman - (415) 642-3167

Computer Education:

Provides a variety of services for teachers and students including workshops, creative play courses, etc., using both BASIC and PILOT.

Contact: Robert Kahn - (415) 642-1238

Computer Education at the School for the Deaf:

Developing CAI authoring systems to allow teachers to enter in their own materials. Holds workshops for instructors interested in using these materials.

Contact: Tim Aaronsen - (415) 642-3598

University of California, Irvine, Computer Facility, Irvine, California 92717

Hardware: Honeywell Sigma 7

Languages: Assembly, FORTRAN, and APL

Courseware:

Physics

About 100 computer dialogues with extensive use of computer graphics; includes on-line quizzes for the mechanics part of the beginning course.

Contact: Al Bork - (714) 833-6911

Mathematics

On-line exams for the Pre-Calculus course.

Contact: Steve Franklin - (714) 833-5154

Chemistry

Chem-world redox reaction.

Contact: Dick Ballard - (714) 833-5849

Biology

Ecology simulations.

Contact: Keith Justice - (714) 833-6231

CAI READING LIST

General References

Author's Guide to CAI. College of Medicine, Ohio State University, Columbus, fourth edition, 1977. $ 30.00

Focuses on the authoring process which culminates in the construction of both tutorial and simulation types of CAI.

Computers in Education Handbook. Department of Computer Science, University of Oregon, Eugene, fourth printing, 1976. 10.80

General - covers the uses of computers in education. Of particular interest are Chapter 4, "The Computer as an Aid to Learning", and Chapter 5, "The Computer as a Teacher".

Computer-Based Education Abstracts. Entelek, Inc., 42 Pleasant Street, Newbury, MASS 01950. Issued four times yearly. 77.50

Surveys the major periodicals concerned with Computer Assisted Instruction.

Seventh Conference on Computers in the Undergraduate Curricula, Proceedings, 1976. Order from Ted Sjoerdsma, Treasurer, CCUC, 124B Lindquist Center for Measurement, Iowa City, Iowa 52242. 10.00 each

Held annually, the Conference's proceedings each contain approximately 80 papers in almost all subject areas.

Encyclopedia of Computer Science. Anthony Ralston, Editor Petrocelli/Charter, New York, 1976. 60.00

Although primarily concerned with computers as a field, the Encyclopedia contains several excellent overview articles on computerized instruction, including "Computer-Assisted Instruction" (CAI) and "Computer-Assisted Learning and Teaching".

1977 ADCIS Proceedings. Order from Dr. Fred T. Hofstetter, Music Department, University of Delaware, Newark, Delaware 19711. 10.00

Index to Computer Based Learning. Instructional Media Laboratory, University of Wisconsin, 1976. P.O Box 413, Milwaukee, Wisconsin 53201

9.50 fiche
24.75 printout

Contains comprehensive information about over 1800 computer based learning programs available internationally. Published semi-annually -- available in microfiche or as a computer printout.

Periodicals

ADCIS News (see CAI Organizations, ADCIS)

Computers and Education - An International Journal. Issued quarterly, $50 a year for institutions, $30 for individuals affiliated with a subscribing institution. Available from: The Subscription Fulfillment Manager, Pergamon Press Ltd., Headington Hill Hall, Oxford OX3 OBW, England.

A brand new addition to the Pergamon Research and Review Journal library, Computers and Education, in Volume 1, Number 1, "sets as its goal the establishment of an international forum for communication in the use of ... computers in all aspects of higher education. Since the scope of computer applications in all levels of education is virtually unlimited, principal emphasis will be on college undergraduate use."

CONDUIT State of the Art Report (see CAI Organizations, CONDUIT)

Creative Computing. Six issues per year; $8.00; $6.00 for students or groups; $15.00 for institutions. Editor: David A. Ahl, Ideametrics, Box 789-M, Morristown, NJ 07960.

Written in very light style. Has a large number of articles dealing with the development of materials in BASIC. Possibly aimed more at elementary and secondary schools than at college markets.

Educational Technology Educational Technology, 140 Sylvan Avenue, Englewood Cliffs, NJ 07632. $ 25.00

Educational Technology includes information and stimulating articles about new learning techniques and strategies, many of which may be used by Computer Based Instruction.

The Journal (Technological Horizons in Education). Eleven issues per year; no charge to persons who qualify (e.g., management in public and private educational facilities); $15.00 otherwise. Editor: John F. Martell, Information Synergy, Inc., P. O. Box 992, Acton, MA 01720.

Although primarily concerned with the use of technology as a whole in education, each issue usually contains some material on the uses of computers in education.

Journal of Computer-Based Instruction (see CAI Organizations, ADCIS).

Journal of Educational Data Processing. Issued quarterly, P. O. Box 867, Soquel, CA 95073. 15.00

A forum for professional articles in instructional and administrative educational computing. Has had several issues dedicated to CAI.

PIPELINE (see CAI Organizations, CONDUIT).

SIGCUE Bulletin (see CAI Organizations, ACM).

Simulation and Games. Sage Publications, Inc. 275 So. Beverly Drive, Beverly Hills, CA 90212. Issued quarterly; $14.40 for individuals, $24 for institutions.

". . . intended to provide a forum for theoretical and empirical papers related to man, man-machine, and machine simulations of social processes."

CAI ORGANIZATIONS

Association for Computing Machinery (ACM), 1133 Avenue of the Americas, New York, NY 10036. Membership: $35.00, which includes subscription to the monthly Communications of the ACM (non-member subscription rate: $42.00).

The Special Interest Group on Computer Uses in Education (SIGCUE) issues a quarterly bulletin, which is probably the best resource available for those interested in college teaching and learning.

Subscriptions available from SIGCUE, Association for Computing Machinery, P. O. Box 12105, Church Street Station, New York, NY 10249. $4.00 for ACM members, $6.00 otherwise.

Association for the Development of Computer-Based Instructional Systems (ADCIS). Individual membership $20.00 per year available from Dr. Peter Dean, Secretary-Treasurer, ADCIS, P.O. Box 70189, Los Angeles, CA 90070.

ADCIS has the following sub-groups: Elementary/Secondary/Junior Colleges; Health Sciences; Implementations.

The Journal of Computer-Based Instruction, issued quarterly, publishes scholarly articles on Computer Based Instruction topics. It is free for ADCIS members, or may be ordered for $12.00 from:

Journal of Computer-Based Instruction
215 South Main
Clarion, Iowa

ADCIS also publishes a bi-monthly newsletter, the ADCIS News.

Association for Educational Data Systems (AEDS), 1201 Sixteenth Street, N.W., Washington, D.C. 20036. Individual membership: $25.00.

Includes subscription of AEDS Bulletin, AEDS Monitor, AEDS Journal. NAUCAL sub-group is of particular interest.

California Educational Computing Consortium (CECC), California State University, Long Beach, 1250 Bellflower Blvd., Long Beach, CA 90840.

Sponsors two conferences and workshops a year on the use of computers in higher education. No membership fee.

Contact: Ronald J. Langley - (213) 498-4755

CONDUIT, P. O. Box 388, Iowa City, Iowa

Supported by a grant from NSF, CONDUIT is a consortium of university users working on developing complete, well documented, transferable instructional computer materials. $50.00 subscription includes three issues of the catalog, the State of the Art Report, and copies of PIPELINE, a newsletter issued three times yearly.

DECUS (Digital Equipment Computer Users Society), Maynard, Massachusetts 01754. Membership limited to users of DIGITAL equipment.

A non-profit users group supported by DIGITAL, DECUS provides a variety of services to its members, including assembling and distributing user supplied programs. Various local groups meet on a regular basis. Educational DIGITAL users in California may be interested in the Northern and Southern California RSTS LUGS (local user groups). Publishes DECUSCOPE and EDUSIG News (EDUSIG is the Education Special Interest Group of DECUS).

Contact: Eli Glazer, DECUS Executive Director - (617) 897-5111, Ext. 4160

Hewlett-Packard Educational Users Group, Hewlett-Packard, General Systems Division, 5303 Stevens Creek Blvd., Santa Clara, CA 95050. ATTN: Educational Users Services.

Membership is available for all current or potential users of HP equipment. A variety of services are provided, including:

HP Educational Users Group Newsletter
Approximately eight issues per year. Free to HP equipment users, $6.00 otherwise.

Computer Curriculum Project
Provides complete course materials for various subject areas in secondary schools, as well as physics, business, and environmental study courseware at the university level.

HP Clearing House
Produces a catalog every six months of materials available for use on HP machines.

HP Contributed Library
Programs supplied by users are collected and distributed to HP users for a minimal charge.

Contact: Tom Lee - (408) 249-7000

CAI COURSEWARE SOURCES

CONDUIT (see CAI Organizations)

Dartmouth Timesharing System (DTSS), Mr. Eugene A. Fucci, Assistant Director, Kiewit Computation Center, Dartmouth Computation Center, Dartmouth College, Hanover, New Hampshire

For those in the San Francisco and Los Angeles areas, access to the extensive Dartmouth Library can be obtained via TELENET ports of entry for approximately $8.00 per hour plus the cost of the call to Los Angeles or San Francisco.

Contact: Eugene Fucci - (603) 646-2643

DECUS (see CAI Organizations)

Hewlett-Packard Educational Users Group (see CAI Organizations)

Index to Computer-Based Learning, Anastasia Wang, Editor, Instructional Media Laboratory, University of Wisconsin/Milwaukee, P. O. Box 413, Milwaukee, Wisconsin 53201. $9.50 microfiche; $24.75 printout. Phone: (414) 963-4788

The most current and comprehensive listing of computer based learning programs, the 1976 edition indexes 1836 programs from 222 sources. It is cross-indexed by subject matter, programming language, central processor, instructional logic and source.

Physics Computer Development Project, University of California, Irvine, Dr. Alfred Bork, Professor of Physics, University of California, Irvine, CA 92717.

Materials distributed without cost to those with appropriate hardware.

CAI CONFERENCE CALENDAR

November 6-8, 1977	Ninth Annual Individualized Instruction Congress, Purdue University. Chairman: Dr. J. D. Russell, 3010 Rosewood Drive, West Lafayette, Indiana 47906
November 8-11, 1977	COMPSAC 77: First International Computer Software and Applications Conference, Chicago, Illinois. Chairman: Stephen Yau, Chairman, Department of Computer Science, Northwestern University, Evanston, Illinois 60201.
November 17-19, 1977	Western Educational Computing Conference, Jack Tar Hotel, San Francisco, California. Sponsor: California Educational Computing Consortium. Contact: Ronald J. Langley, California State University, Long Beach, 1250 Bellflower Blvd., Long Beach, CA 90840
November 28 - December 1, 1977	Fall DECUS Symposium, Town and Country Hotel, San Diego, California. Contact: Thomas W. McIntyre, Digital Equipment Computer Users Society, 129 Park Street, Maynard, MASS 01754
December 5-7, 1977	1977 Winter Simulation Conference, Gaithersburg, MD. Chairman: Robert G. Sargent, Dept. of Engineering and Operations Research, Syracuse University, Syracuse, NY 13210
February 27 - March 3, 1978	ADCIS Winter 1978 Conference, Dallas, Texas. Host: Carol Luce, East Texas State University, Commerce, Texas 75428

March 15-17, 1977	Eleventh Annual Simulation Symposium, Tampa, Florida. Chairman: Ira M. Kay, Box 22621, Tampa, Florida 33622
April 6-8, 1978	Spring CECC Meeting and Workshop, Registry Hotel, Orange County Airport, 18800 MacCarther Blvd., Irvine, CA 92715 Sponsor: California Educational Computing Consortium. Contact: Ronald J. Langley, California State University, Long Beach, Long Beach, California 90840
May 15-19, 1978	16th Annual AEDS Convention, Atlanta, Georgia. Contact: Dr. James Eisele, Office of Computing Activities, University of Georgia, Athens, GA 30602

CALIFORNIA STATE UNIVERSITY, FRESNO
Center for Information Processing

CAI RESOURCE PERSONS

Field	Name and Address	Telephone No.	Message No.
Accounting	Jim McEntire, Instructor Accounting Department Contra Costa College 2600 Mission Bell Drive San Pablo, CA 94806	(415) 235-7800 ATSS - Same	(415) 235-7800 ATSS - Same
Agricultural Economics Business Simulations	Carl Pherson Associate Professor of Agricultural Economics California State University, Fresno Fresno, CA 93740	(209) 487-1075 ATSS - Same	(209) 487-2949 ATSS - Same
Author Languages Artificial Intelligence	Fred Hornbeck Associate Professor of Psychology San Diego State University San Diego, CA 92182	(714) 286-5909 ATSS 636-5909	(714) 286-5358 ATSS 636-5358
Biology	Dennis Anderson Professor of Botany Humboldt State University Arcata, CA 95521	(707) 826-3677 ATSS - Same	(714) 826-3245 ATSS - Same
Biology	Dennis Hynes Professor of Biological Sciences California Polytechnic State University, San Luis Obispo San Luis Obispo, CA 93401	(805) 546-2649 ATSS 628-2649	(805) 546-2649 ATSS 628-2649
Biology	Ruth Von Blum Assistant Research Biologist Lawrence Hall of Science University of California, Berkeley Berkeley, California 94720	(415) 642-2685 ATSS - Same	(415) 642-2685 ATSS - Same

Field	Name and Address	Telephone No.	Message No.
Business	Jerry Sprecher, Manager Center for Information Processing California State University, Fresno Fresno, CA 93740	(209) 487-1123 ATSS - Same	(209) 487-1123 ATSS - Same
Business Economics	John Gessford, Assoc. Professor Business Information Systems California State University, Los Angeles Los Angeles, CA 90032	(213) 224-2931 ATSS 683-2931	(213) 224-3887 ATSS 683-3887
Business Statistics	Jim Kraushauer Associate Professor of Quantitative Methods California State University, Fresno Fresno, CA 93740	(209) 487-1171 ATSS - Same	(209) 487-2852 ATSS - Same
Chemistry	Courtenay Anderson, Instructor Chemistry Department Santa Rosa Community College 1501 Mendocino Santa Rosa, CA 95401	(707) 527-4341 ATSS - Same	(707) 527-4284 ATSS - Same
Chemistry	Joe Cassanova Professor of Chemistry California State University, Los Angeles Los Angeles, CA 90032	(213) 224-3155 ATSS 683-3155	(213) 224-3613 ATSS 683-3613
Chemistry Statistics	Dave Zellmer Associate Professor of Chemistry California State University, Fresno Fresno, CA 93740	(209) 487-2113 ATSS - Same	(209) 487-2103 ATSS - Same
Communication Arts & Sciences	George Diestel, Professor of Communication Arts & Sciences California State University, Fresno Fresno, CA 93740	(209) 487-2477 ATSS - Same	(209) 487-2826 ATSS - Same
Computer Administered Testing	Perry Edwards, Instructor Math & Business Data Processing Sierra College 5000 Rocklin Road Rocklin, CA 95677	(916) 624-3333 ATSS - Same	(916) 624-3333 ATSS - Same

Field	Name and Address	Telephone No.	Message No.
Computer Managed Instruction Author Languages Data Processing	Bob Swanson, Manager Instructional Service Campus Information Systems San Diego State University San Diego, CA 92182	(714) 286-6481 ATSS 636-6481	(714) 286-6481 ATSS 636-6481
Computerized Guidance (Eureka)	Jim Stubblefield, Chairman Counseling Department Diablo Valley College 321 Golf Club Road Pleasant Hill, CA 94523	(415) 685-1230 ATSS - Same	(415) 685-1230 Atss - Same
English	Anna Marie Thames Communications Division Golden West College 15744 Golden West Huntington Beach, CA 92647	(714) 892-7711 ATSS - Same	(714) 892-7711 ATSS - Same
General Applications of CAI Psychology	Jack Chambers, Director Center for Information Processing California State University, Fresno Fresno, CA 93740	(209) 487-1123 ATSS - Same	(209) 487-1123 ATSS - Same
General Applications of CAI Science Education	Jim B. Cunningham Associate Professor of Education California State University, Northridge Northridge, CA 91330	(213) 885-2529 ATSS 672-2529	(213) 885-2580 ATSS 672-2580
General Applications of CAI	David Leveille, Associate Director Learning Services Development Office of the Chancellor 400 Golden Shore Long Beach, CA 90820	(213) 590-5542 ATSS 635-5542	(213) 590-5542 ATSS 635-5542
Geography Information Science	John Westfall, Professor Geography and Information Science California State University, San Francisco San Francisco, CA 94132	(415) 469-1149 ATSS 554-1149	(415) 469-2049 ATSS 554-2049
Home Economics Dietetics & Nutrition	Ratana Newsome Professor of Home Economics California State University, Fresno Fresno, CA 93740	(209) 487-1211 ATSS - Same	(209) 487-2164 ATSS - Same

Field	Name and Title	Telephone No.	Message No.
Linguistics Foreign Languages	David Moor Courseware Specialist Center for Information Processing California State University, Fresno Fresno, CA 93740	(209) 487-1123 ATSS - Same	(209) 487-1123 ATSS - Same
Management	AnnaBelle Sartore Associate Professor of Management California State University, Long Beach Long Beach, CA 90840	(213) 498-4557 ATSS - Same	(213) 498-4557 ATSS - Same
Math Graphics & Interactive Computer-Based Testing	Steve Franklin Senior Administrative Analyst Office of Special Programs University of California, Irvine Irvine, CA 92717	(714) 833-5154 ATSS - Same	(714) 833-5154 ATSS - Same
Math	Noal Harbertson Associate Professor of Mathematics California State University, Fresno Fresno, CA 93740	(209) 487-2992 ATSS - Same	(209) 487-2992 ATSS - Same
Math Calculus and other Math Uses	Tom Green, Instructor Math Department Contra Costa College 2600 Million Bell Drive San Pablo, CA 94806	(415) 235-7800 ATSS - Same	(415) 235-7800 ATSS - Same
Math Logic Probability	Pat Suppes, Professor Institute for Mathematical Studies in the Social Sciences Ventura Hall Stanford University Stanford, CA 94305	(415) 497-3111 ATSS - Same	(415) 497-3111 ATSS - Same
Math Statistics	Jeff Mock, Instructor Math Department Diablo Valley College 321 Golf Club Road Pleasant Hill, CA 94523	(415) 685-1230 ATSS - Same	(415) 685-1230 ATSS - Same

Field	Name and Address	Telephone No.	Message No.
Physics	Robert Eisberg Professor of Physics University of California, Santa Barbara Santa Barbara, CA 93106	(805) 961-4171 ATSS - Same	(805) 961-3888 ATSS - Same
Physics	Bob Sum, Instructor Physics Department Golden West College 15744 Golden West Huntington Beach, CA 92647	(714) 892-7711 ATSS - Same	(714) 892-7711 ATSS - Same
Physics	Sun-Yu-Fung Professor of Physics University of California, Riverside Riverside, CA 92521	(714) 787-5636 ATSS 651-5636	(714) 787-5331 ATSS 651-5331
Physics (APL)	Ralph Mills, Associate Professor Chairman of Department, Physics Orange Coast College 2701 Fairview Road Costa Mesa, CA 92626	(714) 556-5678 ATSS - Same	(714) 556-5675 ATSS - Same
Physics Chemistry Math	Sam Wiley Professor of Physics California State University, Dominguez Hills 1000 East Victoria Carson, CA 90747	(213) 515-3591 ATSS - Same	(213) 515-3591 ATSS - Same
Physics Chemistry Math	Dick Ballard Assistant Research Physicist Department of Physics University of California, Irvine Irvine, CA 92717	(714) 833-5849 ATSS - Same	(714) 833-6911 ATSS - Same
Physics Electricity & Magnetism	Evan Jones, Instructor Physics Department Sierra College 5000 Rocklin Road Rocklin, CA 95677	(916) 624-3333 ATSS - Same	(916) 624-3333 ATSS - Same

Field	Name and Address	Telephone No.	Message No.
Physics Math	Alfred Bork Professor of Physics University of California, Irvine Irvine, CA 92717	(714) 833-6945 ATSS - Same	(714) 833-6911 ATSS - Same
Physics Math	Herb Peckham Professor of Natural Sciences Gavilan College 5055 Santa Teresa Blvd. Gilroy, CA 95020	(408) 847-1400 ATSS - Same	(408) 847-1400 ATSS - Same
Physics Math Engineering	Joe Marasco, Systems Analyst Fluor Corporation Michelson Drive Irvine, CA 92717	(714) 975-2954 ATSS - Same	(714) 975-2954 ATSS - Same
Physics Optics Graphics Statistics	Robert Lawrence, Instructor Physics Department Sierra College 5000 Rocklin Road Rocklin, CA 95677	(916) 624-3333 ATSS - Same	(916) 624-3333 ATSS - Same
Psychology Test Theory & Statistics Exp'l Simulation	Raul Betancourt Associate Professor of Psychology California State University, Fresno Fresno, CA 93740	(209) 487-2788 ATSS - Same	(209) 487-2691 ATSS - Same
Social Sciences	Denney Van Tassel Coordinator of Services Computer Center University of California, Santa Cruz Santa Cruz, CA 95064	(408) 429-2434 ATSS 529-2434	(408) 429-2434 ATSS 529-2434
Social Sciences Statistics	Gene Geisler Professor of Political Science San Francisco State University San Francisco, CA 94132	(415) 469-1448 ATSS 554-1448	(415) 469-1178 ATSS 554-1178

Catalog of

Programs

CENTER FOR INFORMATION PROCESSING

CALIFORNIA STATE UNIVERSITY, FRESNO

25

CATALOG

of

INSTRUCTIONAL MATERIALS

CALIFORNIA STATE UNIVERSITY, FRESNO
Center for Information Processing

Second Edition, 1977-78

INTRODUCTION

The Catalog of Instructional Programs was initially developed as a comprehensive guide to courseware available on the PDP 11/45 timesharing system at California State University, Fresno. Like the first edition, the development of the second edition of this publication was a major effort in collecting, classifying, distributing, evaluating, and re-writing of computer programs so as to double the size of the library of evaluated, restructured programs.

As in last year's catalog, program abstracts are presented for those programs determined by faculty evaluators to be of value as a supplement to course content. Each program considered for inclusion was first reviewed by one or more faculty member, and rated from one to four, depending upon the program's value as a learning or teaching tool. Those programs receiving a three or four rating were completely rewritten in a structured, basic BASIC -- thoroughly documented and tested. Hopefully, the programs should be easy to modify to fit particular learning situations, easy to maintain on the PDP 11/45, and easy to transport to other computer systems.

E. M. Green, Acting Assistant Director
for Instruction and Research

ACKNOWLEDGEMENT

Many thanks are due to the Center staff members who participated in this project, especially David Moor and Marilyn Meyers. A special thanks also goes to the student programmers listed in the appendices whose time and energy was given to restructuring of the additional programs. Finally, grateful appreciation goes to the many CSUF faculty members who served as program evaluators, and whose names appear both in the appendices and as a part of the program documentation throughout the catalog.

EMG

TABLE OF CONTENTS

Programs Developed for First Edition

Program Documentation	*Page*
ADSIM	1
ANVAR3	4
ANVAR4	5
ASSIGN	6
BALSHT	7
BOND	8
BUDGET	10
CALORI	11
CHISQS	14
CORMAT	15
ELECT1	21
ELECT2	22
GCPTH	24
LNREG1	31
MARKET	35
MKBUY	37
MOLE	39
PERT	45
POLFIT	46
PRBSTA	49
SCORES	54
STAT	58
STAT1	59

TABLE OF CONTENTS

New Programs Developed for Second Edition

Program Documentation	*Page*
ANIMAL	3
BOUNCE	9
CEMGEN	12
CHARGE	13
CURFIT	16
DAYREQ	17
DECAY1	18
DECAY2	19
DEPCOM	20
ELIZA	23
INSTMT	25
KINEMA	26
LEASE	27
LENS	28
LINFIT	29
LINPRO	30
LNTRND	32
LOCKEY	33
LPFLTR	34
MNIDIT	38
NEWTN2	40
NORTON	41
NZYM2	42
OVHVR	43

PENFUN 44
PHOTEL 46
POLUTE 48
PRIMEV 50
PRJCTL 51
REFLECT 52
SALES 53
SLITS 55
SNELL 56
SPACE 57
TAG 60
WAVES 61

Index of Programs by Discipline 62
Index of Programs by Level of Difficulty 64
Index of Programs by Origin 67
Appendices 70
A. *Programs Evaluated but not Documented* 71
B. *Programs not yet Evaluated* 73
C. *Faculty Evaluators* 77
D. *Courseware Programmers* 78

CALIFORNIA STATE UNIVERSITY, FRESNO
Center for Information Processing

Program Name: ADSIM

Descriptive Title: A Program to Test Potential Decisions for the Simulation Game ADSIM

Applicable Field: Management

Faculty Evaluators and Ratings: David C. Anderson, Professor, Management & Accounting (2)
Lanny Ryan, Lecturer, Management & Marketing (3)

Origin of the Program: California State University, Fresno

Program Description:

Educational Description: Program ADSIM was designed to be used in conjunction with a batch computer program, also called ADSIM, which runs on a Control Data Corporation 3150 computer system. The interactive version allows students to evaluate ahead of time what effect their decisions will have on certain calculations performed by the batch program. The program is appropriate for use by college students enrolled in beginning or intermediate level management courses. It does not necessarily need to be used in conjunction with the batch simulation, since by itself it provides a good example of simulation in a production environment. It teaches students to think in overall systems terms and teaches them the use of management principles. Students should obtain a copy of the ADSIM manual, written by David C. Anderson, at California State University, Fresno.

Technical Description: Program ADSIM is written in Digital Equipment Corporation's (DEC) BASIC PLUS language and runs on a DEC PDP 11/45 computer system under the RSTS/E (Resource-Sharing, Time-Sharing/ Extended) Version 6A operating system. The computer system has a 64K word memory main frame with one RP04 disk, one TU09 tape drive, and one 300 lpm line printer.

The program is approximately 175 statements in length and requires 6K user core area. There are no large data files associated with this program.

The program uses the following special system functions: TAB, CVT$$, CHR$.

Recommended Usage Procedure:

This program should be used as a supplement to other homework assignments. If used in conjunction with the batch simulation program, approximately one hour per week is required to effectively utilize the program. If used as an example of production simulation, one hour of time should be sufficient.

The program could be expanded to provide a more complete estimation of the results of the decisions made by the students. In its current state, the program is somewhat limited.

How to Access the Program: LIB ADSIM

CALIFORNIA STATE [illegible]Y, FRESNO
Center for Informat[illegible]n Processing

Program Name: ANIMAL

Descriptive Title: Interactive Computer Learning Simulation

Applicable Field(s): Education

Faculty Evaluator and Rating: Terry G. Newell, Associate Professor, Psychology (3)

Origin of the Program: DECUS Application Library

Program Description:

Educational Description: This program is appropriate for lower division education students and demonstrates heuristic computer learning and queing techniques. The program stores learning information based on interactive questions supplied by the user which the program uses later in determining the thoughts of the user.

Technical Description: Program ANIMAL is written in Digital Equipment Corporation's (DEC) BASIC PLUS language and runs on a DEC PDP 11/45 computer system under the RSTS/E (Resource-Sharing, Time-Sharing/ - Extended) Version 6A operating system. The computer system has a 64K word memory main frame with one RP04 disk, one TU09 tape drive, and one 300 lpm line printer.

The program is approximately 250 statements in length and requires a 6K user core area.

The program uses the following special system functions: CHR$ (for manipulation of ASCII character codes) and CVT$$ (to handle upper and lower case inputs).

Recommended Usage Procedure:

This program should be used to demonstrate computer learning as a simulation or interest generating program by departments beginning to introduce timesharing to their faculty.

How to Access the Program: LIB ANIMAL

CALIFORNIA STATE UNIVERSITY, FRESNO
Center for Information Processing

Program Name: ANVAR3

Descriptive Title: Two way Analysis of Variance

Applicable Fields: Business, Education, Psychology

Faculty Evaluator and Rating: D. Stan Mattoon, Lecturer, Accounting & Quantitative Studies (3)

Origin of the Program: Digital Equipment Computer Users Society (DECUS)

Program Description:

Educational Description: Program ANVAR3 is appropriate for use by college students enrolled in upper division statistics courses at an intermediate level. The program calculates an F-ratio and the number of degrees of freedom for two-dimensional matrix of data input by the student. The program demonstrates how degrees of freedom and F-ratios compare between different data sets. Students should have some background in elementary statistics before attempting to use this program

Technical Description: Program ANVAR3 is written in Digital Equipment Corporation's (DEC) BASIC PLUS language and runs on a DEC PDP 11/45 computer system under the RSTS/E (Resource-Sharing, Time-Sharing/Extended) Version 6A operating system. The computer system has a 64K word memory mainframe with one RP04 disk, one TU09 tape drive, and one 300 lpm line printer.

The program is approximately 240 statements in length and requires an 8K user core area. The program also requires approximately 15 blocks of disk storage for data files.

The program uses the following special system functions: CHR$ (for manipulation of ASCII character codes) and CVT$$ (to handle upper and lower case inputs). An appropriate reference is Chapter 18 on Factorial Designs from Statistical Inference - Volume I by Jerome C. R. Li, published by Edwards Brothers, Inc., Ann Arbor, Michigan (1964).

Recommended Usage Procedure:

This program should be used to demonstrate concepts covered in classroom lectures and in the textbook. Students should plan to devote three or four half-hour sessions to running the program.

How to Access the Program: LIB ANVAR3

CALIFORNIA STATE UNIVERSITY, FRESNO
Center for Information Processing

Program Name: ANVAR4

Descriptive Title: Two-way Analysis of Variance with Replications

Applicable Fields: Business, Education, Psychology

Faculty Evaluator and Rating: D. Stan Mattoon, Lecturer, Accounting & Quantitative Methods (3)

Origin of the Program: Digital Equipment Computer Users Society (DECUS)

Program Description:

Educational Description: Program ANVAR4 is appropriate for use by college students enrolled in upper division statistics courses at an intermediate level. The program calculates an F-ratio and the number of degrees of freedom for two-dimensional matrix of data input by the student. The program demonstrates how degrees of freedom and F-ratios compare between different data sets. Students should have some background in elementary statistics before attempting to use this program.

Technical Description: Program ANVAR4 is written in Digital Equipment Corporation's (DEC) BASIC PLUS language and runs on a DEC PDP 11/45 computer system under the RSTS/E (Resource-Sharing, Time-Sharing/Extended) Version 6A operating system. The computer system has a 64K word memory main frame with one RP04 disk, one TU09 tape drive, and one 300 lpm line printer.

The program is approximately 240 statements in length and requires an 8K user core area. The program also requires approximately 15 blocks of disk storage for data files.

The program uses the following special system functions: CHR$ (for manipulation of ASCII character codes) and CVT$$ (to handle upper and lower case inputs). An appropriate reference is Chapter 18 on Factorial Designs from Statistical Inference - Volume I by Jerome C.R. Li, published by Edwards Brothers, Inc., Ann Arbor, Michigan (1964).

Recommended Usage Procedure:

This program should be used to demonstrate concepts covered in classroom lectures and in the textbook. Students should plan to devote three or four half-hour sessions to running the program.

How to Access the Program: LIB ANVAR4

CALIFORNIA STATE UNIVERSITY, FRESNO
Center for Information Processing

Program Name: ASSIGN

Descriptive Title: A Program to Demonstrate the Assignment Method of Linear Programming

Applicable Fields: Management, Operations Research

Faculty Evaluators and Ratings: Mostafa Elhag, Professor, Accounting & Quantitative Methods (4)
Richard Tellier, Assoc. Professor, Management & Marketing (4)

Origin of the Program: Digital Equipment Computer Users Society (DECUS)

Program Description:

Educational Description: ASSIGN is a computer program which uses linear programming to assign men to jobs on a one-to-one basis. The program is appropriate for students in undergraduate college level classes in management or operations research at an intermediate level. Students should already have some background in the nature of assignment problems and how to solve them. The computer does not teach the concepts but rather demonstrates the application of the assignment algorithm.

Technical Description: Program ASSIGN is written in Digital Equipment Corporation's (DEC) BASIC PLUS language and runs on a DEC PDP 11/45 computer system under the RSTS/E (Resource-Sharing, Time-Sharing/Extended) Version 6A operating system. The computer system has a 64K word memory main frame with one RP04 disk, one TU09 tape drive, and one 300 lpm line printer.

The program is approximately 330 statements in length and requires an 8K user core area. There are no large data files associated with this program.

The program consists of four major sections: The main driver, an input section, a processing section, and an output section. The following special system functions are used: CVT$$ (to handle upper and lower case input) and CHR$ (to cause a full screen erase on the CRT).

Recommended Usage Procedure:

The program should be used as an adjunct to homework assignments. Students should not attempt to use the program until they have some background in the assignment technique of linear programming.

How to Access the Program: LIB ASSIGN

CALIFORNIA STATE UNIVERSITY, FRESNO
Center for Information Processing

Program Name: BALSHT

Descriptive Title: A Program to Prepare a Simple Balance Sheet and Income Statement

Applicable Field: Accounting

Faculty Evaluator and Rating: Gerald L. Johnston, Assistant Professor, Accounting and Quantitative Methods (3)

Origin of the Program: Digital Equipment Computer Users Society (DECUS)

Program Description:

Educational Description: Program BALSHT can be used by anyone needing basic budgeting skills; i.e., all students whose major or minor area of interest is business. The program allows students to see the absolute effects of proportional changes in budget statement items. The program is appropriate for beginning accounting students at the undergraduate college level. It can be used to demonstrate practical applications of accounting principles. In general, the program should be introduced in the second basic accounting course or late in the accounting survey course.

Technical Description: Program BALSHT is written in Digital Equipment Corporation's (DEC) BASIC PLUS language and runs on DEC PDP 11/45 computer system under the RSTS/E (Resource-Sharing, Time-Sharing/Extended) Version 6A operating system. The computer system has a 64K word memory main frame with one RP04 disk, one TU09 tape drive, and one 300 lpm line printer.

The program is approximately 400 statements in length and requires an 8K user core area. There are no large data files associated with this program.

Recommended Usage Procedure:

The program should be used as an application of skills learned in the classroom and through homework assignments. A student should have had two to three hours classroom experience and another two to three hours of homework assignments prior to using the computer program. Approximately one-half hour should be set aside for running the program. The program does not teach the concepts involved but it allows the student to drill to test his own understanding.

Students should be well prepared by the instructor and follow-up should be done to ensure that the student has grasped the concepts. It would be easy for the student merely to input data without learning what the program is doing.

How to Access the Program: LIB BALSHT

CALIFORNIA STATE UNIVERSITY, FRESNO
Center for Information Processing

Program Name: BOND

Descriptive Title: A Program to Test Understanding of Various Types of Chemical Bonding

Applicable Field: Chemistry

Faculty Evaluators and Ratings: David Zellmer, Associate Professor, Chemistry (3)
Stan Ziegler, Professor of Chemistry (3)

Origin of the Program: Unknown

Program Description:

Educational Description: Program BOND presents the physical properties, melting points and boiling points, of several compunds and asks the student to determine the type of intra- and inter-molecular bonding. The student is given a list of the possible types. The program is appropriate for freshmen chemistry students, but it requires that they be familiar with bonding concepts. The program tests their comprehension of those theories.

The program requires approximately one-half hour and should be used as a supplement to a freshman chemistry text.

Technical Description: Program BOND is written in Digital Equipment Corporation's (DEC) BASIC PLUS language and runs on a DEC PDP 11/45 computer system under the RSTS/E (Resource-Sharing, Time-Sharing/Extended) Version 6A operating system. The computer system has a 64K word memory main frame with one RP04 disk, one TU09 tape drive, and one 300 lpm line printer.

The program is approximately 50 statements in length and requires 4K user core area. There are three data files associated with this program: BOND.DAT is 5 blocks; BOND.TTL is 2-4 blocks; and BOND.INT is 2-4 blocks in length.

System variables ERR and ERL are used for error trapping. The RESUME command is used to return to the statement where the error occurred.

Recommended Usage Procedure:

The program should be used as a drill for students to study their comprehension of concepts learned in class and by studying the text.

How to Access the Program: LIB BOND

CALIFORNIA STATE UNIVERSITY, FRESNO
Center for Information Processing

Program Name: BOUNCE

Descriptive Title: Simulation of Bouncing Ball to Demonstrate Effects of Gravity and Co-efficients of Elasticity

Applicable Field: Physics

Faculty Evaluators and Ratings: Donald E. Holmes, Associate Professor, Physics (3)
Hugh A. Williamson, Professor of Physics (2)

Origin of the Program: DECUS Application Library

Program Description:

Educational Description: Program BOUNCE is appropriate for use by college students enrolled in lower division physics courses at the beginning level. The program simulates the throwing of a ball. The student specifies the velocity of the ball, the co-efficient of elasticity, and the time increments to be used in "strobing" the ball's flight. The program will then print a graph based on height and time which the ball would follow in theory. Students should have some background in elementary physics before attempting to use this program.

Technical Description: Program BOUNCE is written in Digital Equipment Corporation's (DEC) BASIC PLUS language and runs on a DEC PDP 11/45 computer system under the RSTS/E (Resource-Sharing, Time-Sharing/ Extended) Version 6A operating system. The computer system has a 64K word memory main frame with one RP04 disk, one TU09 tape drive, and one 300 lpm line printer.

The program is approximately 180 statements in length and requires a 6K user core area.

The program uses the following special system functions: CHR$ (for manipulation of ASCII character codes) and CVT$$ (to handle upper and lower case inputs).

Recommended Usage Procedure:

This program should be used as a supplement to demonstrate concepts covered in classroom lecture and in the textbook. Students should schedule two or three five minute sessions to running this program.

How to Access the Program: LIB BOUNCE

CALIFORNIA STATE UNIVERSITY, FRESNO
Center for Information Processing

Program Name: BUDGET

Descriptive Title: A Program to Generate a Departmental Budget

Applicable Field: Cost Accounting

Faculty Evaluator and Rating: Gerald L. Johnston, Assistant Professor, Accounting and Quantitative Methods (3)

Origin of the Program: Digital Equipment Computer Users Society (DECUS)

Program Description:

Educational Description: BUDGET is a program which prepares a budget for one department based on a student's cost inputs in several different categories. The program is appropriate for use by advanced cost accounting students taking undergraduate college level courses. The program allows extensive detail work by the student. Students should have a good cost accounting background before attempting to use the program.

Technical Description: Program BUDGET is written in Digital Equipment Corporation's (DEC) BASIC PLUS language and runs on a DEC PDP 11/45 computer system under the RSTS/E (Resource-Sharing, Time-Sharing/Extended) Version 6A operating system. The computer system has a 64K word memory main frame with one RP04 disk, one TU09 tape drive, and one 300 lpm line printer.

The program is approximately 400 statements in length and requires an 8K user core area. There are no large data files associated with this program.

Recommended Usage Procedure:

The program should be used as an adjunct to other homework assignments. Students should have ten to twelve hours of preparation in class and/or homework assignments before using the computer program. At least one case should be done manually in the same format so that the student is familiar with the relationships involved. The instructor should follow up to ensure that the student understands the assumptions and relationships involved, otherwise the program will quickly lose its effectiveness.

How to Access the Program: LIB BUDGET

CALIFORNIA STATE UNIVERSITY, FRESNO
Center for Information Processing

Program Name: CALORI

Descriptive Title: A Simple Thermodynamics Exercise

Applicable Fields: Chemistry, Physics

Faculty Evaluators and Ratings: David Zellmer, Associate Professor, Chemistry (3)
Stan Ziegler, Professor of Chemistry (2)

Origin of the Program: Digital Equipment Computer Users Society (DECUS)

Program Description:

Educational Description: Program CALORI is a simple physical chemistry program which tests the student's ability to calculate the change in heat content of one breaker of water or alcohol when mixed with another. The program is suitable for college freshman chemistry students, and possibly could be used by non-majors in a physical chemistry course. The program is primarily a drill routine and does not require any particular preparation.

Technical Description: Program CALORI is written in Digital Equipment Corporation's (DEC) BASIC PLUS language and runs on a DEC PDP 11/45 computer system under the RSTS/E (Resource-Sharing, Time-Sharing/Extended) Version 6A operating system. The computer system has a 64K word memory main frame with one RP04 disk, one TU09 tape drive, and one 300 lpm line printer.

The program is approximately 135 statements in length and requires a 5K user core area. There are no large data files associated with this program.

The program uses the following special system functions: CHR$ and CVT$$.

Recommended Usage Procedure:

The program should be assigned as an addition to other homework problems. Only one ten minute session is required to use it. This type of program will become more useful as others similar to it are added to the computer system. Right now, this constitutes only one homework problem, and a rather simple one at that.

How to Access the Program: LIB CALORI

CALIFORNIA STATE UNIVERSITY, FRESNO
Center for Information Processing

Program Name: CEMGEN

Descriptive Title: Chemistry Test Question Generator

Applicable Field: Chemistry

Faculty Evaluators and Ratings: David L. Zellmer, Associate Professor of Chemistry (3)
Stanley M. Ziegler, Professor of Chemistry (2)

Origin of the Program: M.L. Cole - Digital Equipment Corporation

Program Description:

Educational Description: CEMGEN is appropriate for use by Chemistry educators for generating test questions and keyed answers in intermediate chemistry. Individualized test questions based on a name file can be generated for specific students at various levels of accomplishments.

Technical Description: Program CEMGEN is written in Digital Equipment Corporation's (DEC) BASIC PLUS language and runs on a DEC PDP 11/45 computer system under the RSTS/E (Resource-Sharing, Time-Sharing/ Extended) Version 6A operating system. The computer system has a 64K word memory main frame with one RP04 disk, one TU09 tape drive, and one 300 lpm line printer.

The program is approximately 494 statements in length and requires an 8K user core area (16 bit word size). The program requires approximately five blocks of disk storage for data files.

The program uses the following special system functions: CHR$ (for manipulation of ASCII character codes) and CVT$$ (to handle upper and lower case inputs).

Recommended Usage Procedure:

This program should be used by educators as a supplement to course content to evaluate student progress through the generation of typical chemistry problems and analysis.

How to Access the Program: LIB CEMGEN

CALIFORNIA STATE UNIVERSITY, FRESNO
Center for Information Processing

Program Name: CHARGE

Descriptive Title: Millikan Oil Drop Experiment - Simulation on the Change to Mass

Applicable Field: Physics

Faculty Evaluators and Ratings: Donald E. Holmes, Associate Professor, Physics (2)
Hugh A. Williamson, Professor of Physics (3)

Origin of the Program: Huntington I Computer Program Library

Program Description:

Educational Description: CHARGE is a program which uses the experiments of R. A. Millikan (1911) to determine the change in voltage drop across the theoretical experimental apparatus and compute the vertical acceleration acting on an oil drop. This program is appropriate for use by college students enrolled in intermediate physic courses. Students should have some background in elementary physics before attempting to use this program.

Technical Description: Program CHARGE is written in Digital Equipment Corporation's (DEC) BASIC PLUS language and runs on a DEC PDP 11/45 computer system under the RSTS/E (Resource-Sharing, Time-Sharing/ Extended) Version 6A operating system. The computer system has a 64K word memory main frame with one RP04 disk, one TU09 tape drive, and one 300 lpm line printer.

The program is approximately 214 statements in length and requires a 6K user core area.

The program uses the following special system functions: CHR$ (for manipulation of ASCII character codes) and CVT$$ (to handle upper and lower case inputs).

Recommended Usage Procedure:

This program should be used to demonstrate concepts covered in classroom lectures and in the textbooks, and to supplement course content to better demonstrate and understand the relationships which the program is based on. Students should plan to devote two or three half-hour sessions to running the program.

How to Access the Program: LIB CHARGE

CALIFORNIA STATE UNIVERSITY, FRESNO
Center for Information Processing

Program Name: CHISQS

Descriptive Title: Computes the Chi-square Value for an m x n table

Applicable Fields: Business Statistics, Psychology, Math

Faculty Evaluator and Rating: Marilyn Meyers, Lecturer, Accounting & Quantitative Methods* (3)

Origin of the Program: Digital Equipment Computer Users Society (DECUS)

Program Description:

Educational Description: Program CHISQS computes the Chi-square value for a table of input data, entered by the student. The program is appropriate for college level students in any course which requires statistical testing of a hypothesis on a very elementary level. The program can be used to teach students how statistical analysis of data relates to hypothesis testing, and it relieves the student from doing the tedious mathematical calculations by hand. The program requires general knowledge of the Chi-square test.

Technical Description: Program CHISQS is written in Digital Equipment Corporation's (DEC) BASIC PLUS language and runs on a DEC PDP 11/45 computer system under the RSTS/E (Resource-Sharing, Time-Sharing/ Extended) Version 6A operating system. The computer system has a 64K word memory main frame with one RP04 disk, one TU09 tape drive, and one 300 lpm line printer.

The program is approximately 180 statements in length and requires an 8K user core area. In addition, the program requires approximately 12 blocks of disk for data files.

This program uses the following special system functions: CHR$ (for manipulation of ASCII character codes) and CVT$$ (to handle upper and lower case inputs).

An appropriate reference is Chapter 22, "Multinomial Sampling," from Statistical Inference - Volume I by Jerome C. R. Li, published by Edwards Brothers, Inc., Ann Arbor, Michigan (1964).

Recommended Usage Procedure:

The program should be used as an optional learning tool for students first learning to use statistical analysis. Students should be given a fairly solid background in the use of the Chi-square before being given assignments on the computer, otherwise they may misinterpret the results.

How to Access the Program: LIB CHISQS 45

* Mrs. Meyers is presently a Programmer in the Center for Information Processing

CALIFORNIA STATE UNIVERSITY, FRESNO
Center for Information Processing

Program Name: CORMAT

Descriptive Title: Computes a Correlation Matrix from Raw Data

Applicable Fields: Business, Psychology, Math, Sociology

Faculty Evaluator and Rating: Marilyn Meyers, Lecturer, Accounting & Quantitative Methods * (4)

Origin of the Program: Digital Equipment Computer Users Society (DECUS)

Program Description:

Educational Description: Program CORMAT is appropriate for use in any college level course where students are concerned with analyzing data to determine if there is any interrelation between variables. The program requires the students to have some background in statistical analysis, preferable at least one course. The program assists the student in learning how to discern the significant relationships between variables. The program itself handles the tedious calculations so that the student can concentrate on the concepts involved.

Technical Description: Program CORMAT is written in Digital Equipment Corporation's (DEC) BASIC PLUS language and runs on DEC's PDP 11/45 computer system under the RSTS/E (Resource-Sharing, Time-Sharing/ Extended) Version 6A operating system. The computer system has a 64K word memory main frame with one RP04 disk, one TU09 tape drive, and one 300 lpm line printer.

The program is approximately 400 statements in length and requires an 8K user core area. There are no large data files associated with this program.

Recommended Usage Procedure:

Computer runs should be assigned as a required project with pre-defined values. Students should anticipate spending three or four hours in class learning the concepts involved and another ten hours out of class doing homework problems which would include one or two hours of CORMAT runs.

How to Access the Program: LIB CORMAT

* Mrs. Meyers is presently a Programmer in the Center for Information Processing

CALIFORNIA STATE UNIVERSITY, FRESNO
Center for Information Processing

Program Name: CURFIT

Descriptive Title: Least Squares Curve Fit

Applicable Field: Statistics

Faculty Evaluators and Ratings: Richard D. Tellier, Associate Professor, Management & Mktg. (2)
Mostafa Elhag, Professor, Accounting & Quantitative Methods (4)

Origin of the Program: Project Delta Statistics Program

Program Description:

Educational Description: This program performs the least squares curve fit to six functions. The points can be fitted to hyperbolic, linear, exponential, and power functions. A maximum of 200 data pairs may be entered. The functions available for fittings are:

1. Y = A+B (x)
2. Y = A EXP (B**)
3. Y = A* (X**B)
4. Y = Z+B l x
5. Y = 1 l (A+B*X)
6. Y = X/(A+B*X)

Technical Description: Program CURFIT is written in Digital Equipment Corporation's (DEC) BASIC PLUS language and runs on a DEC PDP 11/45 computer system under the RSTS/E (Resource-Sharing, Time-Sharing/Extended) Version 6A operating system. The computer system has a 64K word memory main frame with one RP04 disk, one TU09 tape drive, and one 300 lpm line printer.

The program is approximately 499 statements in length and requires an 11K user core area.

The program uses the following special system functions: CHR$ (for manipulation of ASCII character codes) and CVT$$ (to handle upper and lower case inputs).

Recommended Usage Procedure:

This program should be used to supplement classroom lectures and text homework. A complete explanation of curve fit should preceed any assignments utilizing this program. The program itself does not teach the concepts involved, but merely applies them to solve the problem.

How to Access the Program: LIB CURFIT

CALIFORNIA STATE UNIVERSITY, FRESNO
Center for Information Processing

Program Name: DAYREQ

Descriptive Title: Twenty-four Hour Calorie Analysis Program

Applicable Field: Home Economics - Nutrition

Faculty Evaluator and Rating: Ratana S. Newsome, Professor of Home Economics (3)

Origin of the Program: Computer Corps, Jack Rhine - San Francisco State University. This program can only be distributed throughout the CSUC System. Those wanting this program may contact Computer Corps in San Francisco.

Program Description:

Educational Description: DAYREQ is a computer program which determines if your diet meets the required daily allowance for your intake of food during a specific 24-hour period. Its analysis is based on your age, weight, and activity. Students should have a basic knowledge of dietetics before using this program. The program can also be used as an interesting demonstration.

Technical Description: Program DAYREQ is written in Digital Equipment Corporation's (DEC) BASIC PLUS language and runs on a DEC PDP 11/45 computer system under the RSTS/E (Resource-Sharing, Time-Sharing/Extended) Version 6A operating system. The computer system has a 64K word memory main frame with one RP04 disk, one TU09 tape drive, and one 300 lpm line printer.

The program is approximately 250 statements in length and requires a 7K user core area.

The program uses the following special system functions: CHR$ (for manipulation of ASCII character codes) and CVT$$ (to handle upper and lower case inputs).

Recommended Usage Procedure:

This program should be used as a supplement to classroom lectures. It can be used as an interesting demonstration program in workshops or seminars. Students should plan on devoting two half-hour sessions using the program to get a thorough understanding of the concepts it is demonstrating.

How to Access the Program: LIB DAYREQ

CALIFORNIA STATE UNIVERSITY, FRESNO
Center for Information Processing

Program Name: DECAY1

Descriptive Title: Demonstrates the Principles of Radioactive Decay and Half-Life

Applicable Field: Physics

Faculty Evaluators and Ratings: Donald E. Holmes, Associate Professor, Physics (4)
Hugh A. Williamson, Professor, Physics (3)

Origin of the Program: Huntington I Computer Program Library

Program Description:

Educational Description: This program is designed for use by college students enrolled in intermediate physics courses dealing with the study of radioactive materials decomposing at a constant rate characteristic to each element (half-life). Students should have some background in physics before attempting to use this program.

Technical Description: Program DECAY1 is written in Digital Equipment Corporation's (DEC) BASIC PLUS language and runs on a DEC PDP 11/45 computer system under the RSTS/E (Resource-Sharing, Time-Sharing/Extended) Version 6A operating system. The computer system has a 64K word memory main frame with one RP04 disk, one TU09 tape drive, and one 300 lpm line printer.

The program is approximately 355 statements in length and requires an 8K user core area. The program also requires approximately 19 blocks of disk storage for data files.

The program uses the following special system functions: CHR$ (for manipulation of ASCII character codes) and CVT$$ (to handle upper and lower case inputs).

Recommended Usage Procedure:

This program should be used to demonstrate concepts covered in classroom lectures and in the textbook. Students should plan to devote a minimum of three half-hour sessions to running the program.

How to Access the Program: LIB DECAY1

CALIFORNIA STATE UNIVERSITY, FRESNO
Center for Information Processing

Program Name: DECAY2

Descriptive Title: Radioactive Decay Analysis

Applicable Field: Physics

Faculty Evaluators and Ratings: Donald E. Holmes, Associate Professor, Physics (2)
Hugh A. Williamson, Professor, Physics (3)

Origin of the Program: Huntington I Computer Program Library

Program Description:

Educational Description: DECAY2 is a program used for analyzing radioactive materials in three ways:

1. Calculates half-life of a sample based on two geiger counter readings.
2. Calculates how much of a radioactive sample will remain after a given amount of time.
3. Print a table showing the relationship of mass vs. time of a radioactive sample.

This program is appropriate for high school or college students in intermediate physics.

Technical Description: Program DECAY2 is written in Digital Equipment Corporation's (DEC) BASIC PLUS language and runs on a DEC PDP 11/45 computer system under the RSTS/E (Resource-Sharing, Time-Sharing/Extended) Version 6A operating system. The computer system has a 64K word memory main frame with one RP04 disk, one TU09 tape drive, and one 300 lpm line printer.

The program is approximately 250 statements in length and requires an 8K user core area.

The program uses the following special system functions: CHR$ (for manipulation of ASCII character codes) and CVT$$ (to handle upper and lower case inputs).

Recommended Usage Procedure:

This program should be used as an adjunct to course content and homework assignments. Students should plan on spending a minimum of two ten minute sessions applying lecture presentation material to this simulation.

How to Access the Program: LIB DECAY2

CALIFORNIA STATE UNIVERSITY, FRESNO
Center for Information Processing

Program Name: DEPCOM

Descriptive Title: Depreciation Method Comparison

Applicable Field: Business - Accounting

Faculty Evaluators and Ratings: David C. Anderson, Professor of Management & Accounting (2)
Robert J. Piersol, Professor of Management (1)

Origin of the Program: Project Delta

Program Description:

Educational Description: This program is appropriate for high school students enrolled in beginning business courses dealing with analysis of depreciation. DEPCOM computes and prints monthly depreciation by four methods:

1. Straight line
2. Double declining balance
3. Sum-of-the-years-digits
4. 150% declining balance

Students should have some background in business accounting before attempting to use this program.

Technical Description: Program DEPCOM is written in Digital Equipment Corporation's (DEC) BASIC PLUS language and runs on a DEC PDP 11/45 computer system under the RSTS/E (Resource-Sharing, Time-Sharing/Extended) Version 6A operating system. The computer system has a 64K word memory main frame with one RP04 disk, one TU09 tape drive, and one 300 lpm line printer.

The program is approximately 352 statements in length and requires a 9K user core area.

The program uses the following special system functions: CHR$ (for manipulation of ASCII character codes) and CVT$$ (to handle upper and lower case inputs).

Recommended Usage Procedure:

This program should be used to demonstrate concepts covered in classroom lectures and in the textbook. Students should plan to devote a minimum of two fifteen minute sessions to running this program.

How to Access the Program: LIB DEPCOM

CALIFORNIA STATE UNIVERSITY, FRESNO
Center for Information Processing

Program Name: ELECT1

Descriptive Title: A Simulation of Presidential Elections in the 19th Century

Applicable Fields: Political Science, History

Faculty Evaluators and Ratings: D. Stan Mattoon, Lecturer, Accounting & Quantitative Methods (3)
Gerald Johnston, Assistant Professor, Accounting & Quantitative Methods (2)

Origin of the Program: Unknown

Program Description:

Educational Description: Program ELECT1 is a simulation of presidential elections in the 1800's which is based on image, party, and factors related to political issues. The program is appropriate for use by college students in introductory level political science and history courses. It demonstrates how a candidate's image, party affiliation and stance on issues affect his success in a presidential election.

Technical Description: Program ELECT1 is written in Digital Equipment Corporation's (DEC) BASIC PLUS language and runs on a DEC PDP 11/45 computer system under the RSTS/E (Resource-Sharing, Time-Sharing/Extended) Version 6A operating system. The computer system has a 64K word memory main frame with one RP04 disk, one TU09 tape drive, and one 300 lmp line printer.

The program is approximately 400 statements in length and requires an 8K user core area. There are no large data files associated with this program.

Recommended Usage Procedure:

This program should be used as a supplemental unit when discussing presidential candidates or voting mechanisms as part of the regular classroom discussion. Running the computer simulation will require approximately one-half hour. The simulation is rather simplistic in nature and probably won't hold the student's attention for any extended usage, but it is a good example of how computer simulations can be used to amplify concepts discussed in class or in the text.

How to Access the Program: LIB ELECT1

CALIFORNIA STATE UNIVERSITY, FRESNO
Center for Information Processing

Program Name: ELECT2

Descriptive Title: A Simulation of Presidential Elections in the Twentieth Century

Applicable Fields: Political Science, History

Faculty Evaluators and Ratings: D. Stan Mattoon, Lecturer, Accounting & Quantitative Methods (3)
Gerald Johnston, Assistant Professor, Accounting and Quantitative Methods (2)

Origin of the Program: Unknown

Program Description:

Educational Description: Program ELECT2 is a simulation of presidential elections in the 1900's which is based on image, party, and factors related to political issues. The program is appropriate for use by college students in introductory level political science and history courses. It demonstrates how a candidate's image, party affiliation and stance on issues affect his success in a presidential election.

Technical Description: Program ELECT2 is written in Digital Equipment Corporation's (DEC) BASIC PLUS language and runs on a DEC PDP 11/45 computer system under the RSTS/E (Resource-Sharing, Time-Sharing/Extended) version 6A operating system. The computer system has a 64K word memory main frame with one RP04 disk, one TU09 tape drive, and one 300 lmp line printer.

The program is approximately 400 statements in length and requires an 8K user core area. There are no large data files associated with this program.

Recommended Usage Procedure:

This program should be used as a supplemental unit when discussing presidential candidates or voting mechanisms as part of the regular classroom discussion. Running the computer simulation will require approximately one-half hour. The simulation is rather simplistic in nature and probably won't hold the student's attention for any extended usage, but it is a good example of how computer simulations can be used to amplify concepts discussed in class or in the text.

How to Access the Program: LIB ELECT2

CALIFORNIA STATE UNIVERSITY, FRESNO
Center for Information Processing

Program Name: ELIZA

Descriptive Title: Artificial Conversational Intelligence in a Simulated Therapy Situation Using the COmputer as the Psychotherapist

Applicable Field: Psychology

Faculty Evaluators and Ratings: Terry G. Newell, Associate Professor, Psychology (4)
George S. Leavitt, Professor of Psychology (3)

Origin of the Program: Lawrence Hall of Science

Program Description:

Educational Description: ELIZA is appropriate for use by college students enrolled in lower and upper division psychology courses. The program acts as a psychotherapist by simulating human intelligence in a supposed therapy situation. The computer does not teach the concepts but rather demonstrates the application of therapy under different conditions. Students should have a good background in intermediate psychology before attempting to use this program.

Technical Description: Program ELIZA is written in Digital Equipment Corporation's (DEC) BASIC PLUS language and runs on a DEC PDP 11/45 computer system under the RSTS/E (Resource-Sharing, Time-Sharing/Extended) Version 6A operating system. The computer system has a 64K word memory main frame with one RP04 disk, one TU09 tape drive, and one 300 lpm line printer.

The program is approximately 600 statements in length and requires an 11K user core area.

The program uses the following special system functions: CHR$ (for manipulation of ASCII character codes) and CVT$$ (to handle upper and lower case inputs).

Recommended Usage Procedure:

This program should be used as a tool to show examples of different approach techniques to therapy situations. Students should have a knowledge of clinical psychology and plan on spending 30 minutes at the terminal each time this program is used.

How to Access the Program: LIB ELIZA

CALIFORNIA STATE UNIVERSITY, FRESNO
Center for Information Processing

Program Name: GCPTH

Descriptive Title: Critical Path Analysis, a Technique for Work Scheduling

Applicable Fields: Management, Operations Research

Faculty Evaluators and Ratings: Mostafa Elhag, Professor, Accounting & Quantitative Methods (3)
Richard Tellier, Assoc. Professor, Management & Marketing (3)

Origin of the Program: Digital Equipment Computer Users Society (DECUS)

Program Description:

Educational Description: GCPTH is a computer program to do network analysis using a critical path method. The program is appropriate for use in undergraduate college level courses in Production Management and for Operations Research at an intermediate or advanced level. Students should have a good background in network analysis before attempting to use the program. The computer demonstrates the use of the critical path approach and quickly demonstrates to the student the result of applying the algorithm to the student's data.

Technical Description: Program GCPTH is written in Digital Equipment Corporation's (DEC) BASIC PLUS language and runs on a DEC PDP 11/45 computer system under the RSTS/E (Resource-Sharing, Time-Sharing/Extended) Version 6A operating system. The computer system has a 64K word memory main frame with one RP04 disk, one TU09 tape drive, and one 300 lpm line printer.

The program is approximately 250 statements in length and requires a 6K user core area. There are no large data files associated with this program.

Recommended Usage Procedure:

The program should be used as an adjunct to homework problems. A complete explanation of network analysis and the critical path method should precede any assignments utilizing the program. The program itself does not teach the concepts involved but merely applies them to solve problems.

How to Access the Program: LIB GCPTH

CALIFORNIA STATE UNIVERSITY, FRESNO
Center for Information Processing

Program Name: INSTMT

Descriptive Title: Income Statement

Applicable Field: Business - Accounting

Faculty Evaluators and Ratings: David C. Anderson, Professor, Management & Accounting (2)
Robert J. Piersol, Professor of Management (3)

Origin of the Program: Project Delta Business Program

Program Description:

Educational Description: The program INSTMT is appropriate for use by college students enrolled in low division accounting. The program will print a simple income statement and will allow a sensitivity analysis on various input. Students should have some background in accounting before using this program.

Technical Description: Program INSTMT is written in Digital Equipment Corporation's (DEC) BASIC PLUS language and runs on a DEC PDP 11/45 computer system under the RSTS/E (Resource-Sharing, Time-Sharing Extended) Version 6A operating system. The computer system has a 64K memory main frame with one RP04 disk, one TU09 tape drive, and one 300 lpm line printer.

The program is approximately 385 statements in length and requires an 8K user core area.

The program uses the following special system functions: CHR$ (for manipulation of ASCII character codes) and CVT$$ (to handle upper and lower case inputs)

Recommended Usage Procedure:

This program should be used as a supplement to classroom lectures and the textbook. Students should plan to devote at least one hour in the classroom learning the concepts involved and an additional three hours of homework assignments, including about 30 minutes with this program.

How to Access the Program: LIB INSTMT

CALIFORNIA STATE UNIVERSITY, FRESNO
Center for Information Processing

Program Name: KINEMA

Descriptive Title: Kinetic Energy Relating to the Motion of Material Bodies and the Forces Associated with Velocity and Acceleration

Applicable Field: Physics

Faculty Evaluators and Ratings: David E. Holmes, Associate Professor, Physics (3)
Hugh A. Williamson, Professor of Physics (3)

Origin of the Program: Unknown

Program Description:

Educational Description: KINEMA is a simple drill that allows a student to develop his ability to calculate the height of a thrown object based on its initial velocity. This program is appropriate for college level students enrolled in freshman physics courses.

Technical Description: Program KINEMA is written in Digital Equipment Corporation's (DEC) BASIC PLUS language and runs on a DEC PDP 11/45 computer system under the RSTS/E (Resource-Sharing, Time-Sharing/Extended) Version 6A operating system. The computer system has a 64K word memory main frame with one RP04 disk, one TU09 tape drive, and one 300 lpm line printer.

The program is approximately 126 statements in length and requires a 4K user core area. The program also requires approximately six blocks of disk storage for data files.

The program uses the following special system functions: CHR$ (for manipulation of ASCII character codes) and CVT$$ (to handle upper and lower case inputs).

Recommended Usage Procedure:

As a drill for elementary physics used as an adjunct to classroom lectures and laboratory assignments.

How to Access the Program: LIB KINEMA

CALIFORNIA STATE UNIVERSITY, FRESNO
Center for Information Processing

Program Name: LEASE

Descriptive Title: Lease Purchase Methods

Applicable Field: Management

Faculty Evaluators and Ratings: David C. Anderson, Professor, Management & Accounting (2)
Robert J. Piersol, Professor of Management (3)

Origin of the Program: Written by Darryl Johnson and Dick D'Angelo at Bentley College, March, 1973

Program Description:

Educational Description: LEASE is a program appropriate for college students in beginning business courses. Using this program, students learn the different methods of calculating a lease purchase using straight line, sum-of-the-years-digits, and compound interest methods of amortization.

Technical Description: Program LEASE is written in Digital Equipment Corporation's (DEC) BASIC PLUS language and runs on a DEC PDP 11/45 computer system under the RSTS/E (Resource-Sharing, Time-Sharing/Extended) Version 6A operating system. The computer system has a 64K word memory main frame with one RP04 disk, one TU09 tape drive, and one 300 lpm line printer.

The program is approximately 211 statements in length and requires an 8K user core area.

The program uses the following special system functions: CHR$ (for manipulation of ASCII character codes) and CVT$$ (to handle upper and lower case inputs).

Recommended Usage Procedure:

The program can be used as a supplement to lecture control and homework assignments. Students should be familiar with the different methods of lease purchase before using this program.

How to Access the Program: LIB LEASE

CALIFORNIA STATE UNIVERSITY, FRESNO
Center for Information Processing

Program Name: LENS

Descriptive Title: The Mechanics of an Optical Lens

Applicable Field: Physics

Faculty Evaluators and Ratings: Donald E. Holmes, Associate Professor, Physics (4)
Hugh A. Williamson, Professor, Physics (2)

Origin of the Program: Huntington I Program Library

Program Description:

Educational Description: Program LENS is appropriate for college students in lower division physics. Using this program, students can learn the inter-relationships of light and lens. Some knowledge of the theory of light and optics is necessary before the program can be used.

Technical Description: Program LENS is written in Digital Equipment Corporation's (DEC) BASIC PLUS language and runs on a DEC PDP 11/45 computer system under the RSTS/E (Resource-Sharing, Time-Sharing/Extended) Version 6A operating system. The computer system has a 64K word memory main frame with one RP04 disk, one TU09 tape drive, and one 300 lpm line printer.

The program is approximately 340 statements in length and requires an 8K user core area. The program also requires approximately 18 blocks of disk storage for data files.

The program uses the following special system functions: CHR$ (for manipulation of ASCII character codes) and CVT$$ (to handle upper and lower case inputs).

Recommended Usage Procedure:

This program can be used as an adjunct to other homework assignments. Students should be given a minimal amount of preparation before using this program.

How to Access the Program: LIB LENS

CALIFORNIA STATE UNIVERSITY, FRESNO
Center for Information Processing

Program Name: LINFIT

Descriptive Title: Linear Fit and Correlation

Applicable Fields: Business, Mathematics

Faculty Evaluators and Ratings: Richard Tellier, Associate Professor, Management & Marketing (2)
Mostafa Elhag, Professor, Accounting & Quantitative Methods (3)

Origin of the Program: Project Delta

Program Description:

Educational Description: This program is appropriate for college students enrolled in business or mathematics courses. LINFIT computes the best linear fit and correlation for a set of values of independent variables and their respective dependent variables.

Technical Description: Program LINFIT is written in Digital Equipment Corporation's (DEC) BASIC PLUS language and runs on a DEC PDP 11/45 computer system under the RSTS/E (Resource-Sharing, Time-Sharing/Extended) Version 6A operating system. The computer system has a 64K word memory main frame with one RP04 disk, one TU09 tape drive, and one 300 lpm line printer.

The program is approximately 320 statements in length and requires a 6K user core area.

The program uses the following special system functions: CHR$ (for manipulation of ASCII character codes) and CVT$$ (to handle upper and lower case inputs).

Recommended Usage Procedure:

This program should be used as an adjunct to homework assignments to aid the student in understanding the principles of linear fit. Students should have a knowledge of statistics and plan on a minimum of three 15 minute sessions on the terminal using this program.

How to Access the Program: LIB LINFIT

CALIFORNIA STATE UNIVERSITY, FRESNO
Center for Information Processing

Program Name: LINPRO

Descriptive Title: Linear Programming

Applicable Fields: Business, Mathematics, Agriculture, Health Science

Faculty Evaluators and Ratings: Richard Tellier, Associate Professor, Management & Marketing (2)
Mostafa Elhag, Professor, Accounting & Quantitative Methods (3)

Origin of the Program: ITS Library

Program Description:

Educational Description: Program LINPRO is designed to solve any linear programming problem of under 20 variables and 26 equations. It utilizes the simplex method to solve the problem. LINPRO is recommended for several different disciplines at the upper division class level. Students should have a working knowledge of linear functions before using this program.

Technical Description: Program LINPRO is written in Digital Equipment Corporation's (DEC) BASIC PLUS language and runs on a DEC PDP 11/45 computer system under the RSTS/E (Resource-Sharing, Time-Sharing/Extended) Version 6A operating system. The computer system has a 64K word memory main frame with one RP04 disk, one TU09 tape drive, and one 300 lpm line printer.

The program is approximately 350 statements in length and requires an 8K user core area.

The program uses the following special system functions: CHR$ (for manipulation of ASCII character codes) and CVT$$ (to handle upper and lower case inputs).

Recommended Usage Procedure:

This program should be used as a supplement to classroom lecture. Students should plan on spending at least one hour in the classroom learning the concepts involved and an additional three hours on homework assignments, including one hour spent with this program.

How to Access the Program: LIB LINPRO

CALIFORNIA STATE UNIVERSITY, FRESNO
Center for Information Processing

Program Name: LNREG1

Descriptive Title: Performs a Simple Linear Regression for one Independent Variable

Applicable Fields: Business, Math, Psychology, Sociology

Faculty Evaluator and Rating: Marilyn Meyers, Lecturer, Accounting & Quantitative Methods* (3)

Origin of the Program: Digital Equipment Computer Users Society (DECUS)

Program Description:

Educational Description: Program LNREG1 performs linear regression and linear trend analysis of data. The program is appropriate for college level students in advanced statistics courses and may also be used for forecasting and for some intermediate statistics courses. Students should have a working knowledge of linear functions prior to using the program. The program itself performs calculations to demonstrate projecting the future based upon past occurrences.

Technical Description: Program LNREG1 is written in Digital Equipment Corporation's (DEC) BASIC PLUS language and runs on a DEC PDP 11/45 computer system under the RSTS/E (Resource-Sharing, Time-Sharing/Extended) Version 6A operating system. The computer system has a 64K word memory main frame with one RP04 disk, one TU09 tape drive, and one 300 lpm line printer.

The program is approximately 225 statements in length and requires a 7K user core area. There are no large data files associated with this program.

Recommended Usage Procedure:

The program should be used as a supplemental project. Students should plan on spending at least one hour in the classroom learning the concepts involved and an additional three hours on homework assignments, including about an hour spent with the program.

How to Access the Program: LIB LNREG1

* Mrs. Meyers is currently a Programmer in the Center for Information Processing

CALIFORNIA STATE UNIVERSITY, FRESNO
Center for Information Processing

Program Name: LNTRND

Descriptive Title: Linear Trend Forecasting

Applicable Field: Business - Operations Research

Faculty Evaluators and Ratings: Richard Tellier, Assoc. Professor, Management & Marketing (2)
Mostafa Elhag, Professor, Accounting & Quantitative Methods (3)

Origin of the Program: Bentley College

Program Description:

Educational Description: LNTRND is appropriate for college students enrolled in intermediate business courses which deal with trend forecasting. LNTRND computes a linear trend forecast with seasonal adjustment capabilities based on monthly data. Students should have some background in forecasting and statistics before using this program.

Technical Description: Program LNTRND is written in Digital Equipment Corporation's (DEC) BASIC PLUS language and runs on a DEC PDP 11/45 computer system under the RSTS/E (Resource-Sharing, Time-Sharing/Extended) Version 6A operating system. The computer system has a 64K word memory main frame with one RP04 disk, one TU09 tape drive, and one 300 lpm line printer.

The program is approximately 235 statements in length and requires a 6K user core area.

The program uses the following special system functions: CHR$ (for manipulation of ASCII character codes) and CVT$$ (to handle upper and lower case inputs).

Recommended Usage Procedure:

This program should be used as a supplement to classroom lecture and an adjunct to homework assignments to show practical applications of theoretical knowledge. Students should allow a minimum of three 15-minute sessions on the terminal to use this program.

How to Access the Program: LIB LNTRND

CALIFORNIA STATE UNIVERSITY, FRESNO
Center for Information Processing

Program Name: LOCKEY

Descriptive Title: A Simulation of the Effects on an Inhibitor on Acetylcholinesterase

Applicable Field: Biology

Faculty Evaluator and Rating: David Grubbs, Assistant Professor, Biology (3)

Origin of the Program: Huntington II Program Library

Program Description:

Educational Description: LOCKEY is appropriate for college students enrolled in upper division biology. This program provides the user with a "laboratory" with which to experiment with several different inhibitors on acetylcholinesterase. Students should have a thorough knowledge of this enzyme and the process of hydrolysis.

Technical Description: Program LOCKEY is written in Digital Equipment Corporation's (DEC) BASIC PLUS language and runs on a DEC PDP 11/45 computer system under the RSTS/E (Resource-Sharing, Time-Sharing/Extended) Version 6A operating system. The computer system has a 64K word memory main frame with one RP04 disk, one TU09 tape drive, and one 300 lpm line printer.

The program is approximately 299 statements in length and requires a 7K user core area.

The program uses the following special system functions: CHR$ (for manipulation of ASCII character codes) and CVT$$ (to handle upper and lower case inputs).

Recommended Usage Procedure:

This program should be used as an adjunct to laboratory experiments dealing with acelytcholinesterase. The student should allow two to three half hour sessions with this program.

How to Access the Program: LIB LOCKEY

CALIFORNIA STATE UNIVERSITY, FRESNO
Center for Information Processing

Program Name: LPFLTR

Descriptive Title: Design of a Low Pass Filter

Applicable Field: Engineering - Electronics

Faculty Evaluator and Rating: Kandiah Jeyapalen, Associate Professor, Engineering (3)

Origin of the Program: Hewlett-Packard User's Group

Program Description:

Educational Description: LPFLTR is a model simualtion of different filter circuits which the user designs to help in understanding the principles of low pass filters. This program is appropriate for lower division engineering students enrolled in the electrical engineering option.

Technical Description: Program LPFLTR is written in Digital Equipment Corporation's (DEC) BASIC PLUS language and runs on a DEC PDP 11/45 computer system under the RSTS/E (Resource-Sharing, Time-Sharing/Extended) Version 6A operating system. The computer system has a 64K word memory main frame with one RP04 disk, one TU09 tape drive, and one 300 lpm line printer.

The program is approximately 172 statements in length and requires a 6K user core area.

The program uses the following special system functions: CHR$ (for manipulation of ASCII character codes) and CVT$$ (to handle upper and lower case inputs).

Recommended Usage Procedure:

This program should be used as an adjunct to classroom lecture and homework assignments. Students should have at least three hours of classroom theory before using this program.

How to Access the Program: LIB LPFLTR

CALIFORNIA STATE UNIVERSITY, FRESNO
Center for Information Processing

Program Name: MARKET

Descriptive Title: A Program to Illustrate Marketing Variables

Applicable Fields: Marketing, Accounting, Management, Economics

Faculty Evaluators and Ratings: David C. Anderson, Professor, Management & Accounting (3)
Robert J. Piersol, Professor of Management (3)

Origin of the Program: Digital Equipment Computer Users Society (DECUS)

Program Description:

Educational Description: Program MARKET illustrates the allocation of fixed costs over goods produced by simulation competition between companies. Selling price and advertising costs are two of the primary variables. The student can decrease unit costs by increasing volume and thus spreading the fixed costs. The program is appropriate for use by college students enrolled in courses such as Principles of Marketing, Principles of Accounting, Managerial Accounting, Cost Accounting, Operations Management, and Introduction to Administration. The student can learn to analyze a dynamic environment and determine which marketing variable(s) will produce the best results. The program demonstrates the influence of high fixed costs on financial results and illustrates the importance of inventory control. The program provides a dynamic interacting environment in which students can increase their awareness of marketing variables.

Technical Description: Program MARKET is written in Digital Equipment Corporation's (DEC) BASIC PLUS language and runs on a DEC PDP 11/45 computer system under the RSTS/E (Resource-Sharing, Time-Sharing/Extended) Version 6A operating system. The computer system has a 64K word memory main frame with one RP04 disk, one TU09 tape drive, and one 300 lpm line printer.

The program is approximately 320 statements in length and requires an 8K user core area. There is one main program module, approximately 20 statements in length, and there are 17 subroutines. There are no large data files associated with this program.

The program uses the following special system functions: CHR$, CVT$$ and TAB. The use of these functions is documented within the program.

Recommended Usage Procedure:

Students should have a background in marketing and accounting prior to being assigned this program. The most effective way to use the program

would be to assign team numbers to the students and have each team develop a beginning plan or strategy. They should then report their findings and discuss any subsequent changes in strategy. The amount of time required will vary with the team strategies. Instructors should define clearly what is expected and allow the students to run the program in a test mode first to make sure they understand the instructions. The program can be used in conjunction with the teaching of pricing theory, to illustrate the difficulty of applying theory in competitive situations.

Students may complain about not knowing what the product is. They are also likely to feel that too few variables are involved. The most likely misuse is that students will get caught up in the competition and neglect to analyze the data in conformance with the theories being illustrated.

How to Access the Program: LIB MARKET

CALIFORNIA STATE UNIVERSITY, FRESNO
Center for Information Processing

Program Name: MKBUY

Descriptive Title: A Program to Perform Make-buy Analysis

Applicable Fields: Accounting, Management, Finance

Faculty Evaluators and Ratings: David C. Anderson, Professor, Management & Accounting (2)
Robert J. Piersol, Professor of Management (3)
Lanny Ryan, Lecturer, Management & Marketing (3)

Origin of the Program: Digital Equipment Computer Users Society (DECUS)

Program Description:

Educational Description: Program MKBUY evaluates problems associated with making or buying an item and shows the results of each possible course of action in terms of cost effectiveness. The program is appropriate for use by college students enrolled in beginning or intermediate accounting, finance or management courses. It provides a comparison of investment alternatives and shows the information necessary for the student to make a decision. Students should have some background in finance.

Technical Description: Program MKBUY is written in Digital Equipment Corporation's (DEC) BASIC PLUS language and runs on a DEC PDP 11/45 computer system under the RSTS/E (Resource-Sharing, Time-Sharing/Extended) Version 6A operating system. The computer system has a 64K word memory main frame with one RP04 disk, one TU09 tape drive, and one 300 lpm line printer.

The program is approximately 275 statements in length and requires an 8K user core area. There are no large data files associated with this program.

The program uses the following special system functions: CVT$$ and CHR$.

Recommended Usage Procedure:

The program should be used as a homework assignment or as an adjunct to a classroom lecture. Approximately 15 minutes per student is the only time required.

How to Access the Program: LIB MKBUY

CALIFORNIA STATE UNIVERSITY, FRESNO
Center for Information Processing

Program Name: MNIDIT

Descriptive Title: A Nutrition Application Program

Applicable Fields: Home Economics - Dietetics

Faculty Evaluator and Rating: Ratana S. Newsome, Professor of Home Economics (3)

Origin of the Program: Jack Rhine, San Francisco State University

Program Description:

Educational Description: MNIDIT is appropriate for college students enrolled in nutrition and dietetics courses. This program performs a 24-hour diet analysis based upon the U.S. Department of Agriculture Handbook #72 and food codes found in that publication. Students should be familiar with these materials before attempting to use this program.

Technical Description: Program MNIDIT is written in Digital Equipment Corporation's (DEC) BASIC PLUS language and runs on a DEC PDP 11/45 computer system under the RSTS/E (Resource-Sharing, Time-Sharing/Extended) Version 6A operating system. The computer system has a 64K word memory main frame with one RP04 disk, one TU09 tape drive, and one 300 lpm line printer.

The program is approximately 137 statements in length and requires a 7K user core area. The program also uses the virtual input/output capabilities of the PDP 11/45.

The program uses the following special system functions: CHR$ (for manipulation of ASCII character codes) and CVT$$ (to handle upper and lower case inputs).

Recommended Usage Procedure:

This program should be used as a supplement in classroom lectures and homework assignments dealing with recommended daily requirements and nutrition. Students should allow a minimum of three 15-minute sessions on the terminal to use this model.

How to Access the Program: LIB MNIDIT

CALIFORNIA STATE UNIVERSITY, FRESNO
CENTER FOR INFORMATION PROCESSING

Program Name: MOLE

Descriptive Title: A Simple Drill in Gram/Mole Conversion

Applicable Field: Chemistry

Faculty Evaluators and Ratings: Dave Zellmer, Associate Professor, Chemistry (3)
Stan Ziegler, Professor of Chemistry (2)

Origin of the Program: Unknown

Program Description:

Education Description: MOLE is a simple drill that allows the student to test his ability to calculate a gram formula weight and then convert moles to grams. The program is appropriate for college level students enrolled in freshman Chemistry courses.

Technical Description: Program MOLE is written in Digital Equipment Corporation's (DEC) BASIC PLUS language and runs on a DEC PDP 11/45 computer system under the RSTS/E (Resource-Sharing, Time-Sharing/Extended) version 6A operating system. The computer system has a 64K work memory main frame with one RP04 disk, one TU09 tape drive, and one 300 lpm line printer.

The program is approximately 375 statements in length and requires an 8K user core area.

There are no large data files associated with this program.

Recommended Usage Procedure:

The program should be used as an addition to other homework assignments and requires one or two sessions of five minutes each.

How to Access the Program: LIB MOLE

CALIFORNIA STATE UNIVERSITY, FRESNO
CENTER FOR INFORMATION PROCESSING

Program Name: NEWTN2

Descriptive Title: Newton's Second Law of Motion

Applicable Field: Physics

Faculty Evaluators and Ratings: Donald E. Holmes, Associate Professor, Physics (4)
Hugh A. Williamson, Professor, Physics (2)

Origin of the Program: Huntington 1 Program Library

Program Description:

Educational Description: This program is appropriate for college students enrolled in lower division physics courses. NEWTN2 develops a "feel" for Newton's second law F=MA through a simulation of interrelated circumstances.

Technical Description: Program NEWTN2 is written in Digital Equipment Corporation's (DEC) BASIC PLUS language and runs on a DEC PDP 11/45 computer system under the RSTS/E (Resource-Sharing, Time-Sharing/Extended) Version 6A operating system. The computer system has a 64K word memory main frame with one RP04 disk, one TU09 tape drive, and one 300 lpm line printer.

The program is approximately 400 statements in length and requires an 8K user core area.

The program uses the following special system functions: CHR$$ (for manipulation of ASCII character codes) and CVT$$ (to handle upper and lower case inputs).

Recommended Usage Procedure:

This program should be an adjunct to homework assignments in developing the interrelationship of mass and acceleration to force. Students should plan on a minimum of two fifteen-minute sessions to study those relationships surrounding this law of physics.

How to Access the Program: LIB NEWTN2

CALIFORNIA STATE UNIVERSITY, FRESNO
Center for Information Processing

Program Name: NORTON

Descriptive Title: Astronomical Ephemeris Program

Applicable Field: Physics

Faculty Evaluators and Ratings: Donald E. Holmes, Associate Professor, Physics (1)
Hugh A. Williamson, Professor, Physics (4)

Origin of the Program: DECUS Program Library

Program Description:

Educational Description: This program is designed for use by college students enrolled in astronomy courses. NORTON will provide such information as where a planet or an asteroid can be found on a particular date, what is the velocity and orbital longitude of different planets, and orbital elements of objects.

Technical Description: Program NORTON is written in Digital Equipment Corporation's (DEC) BASIC PLUS language and runs on a DEC PDP 11/45 computer system under the RSTS/E (Resource-Sharing, Time-Sharing/Extended) Version 6A operating system. The computer system has a 64K word memory main frame with one RP04 disk, one TU09 tape drive, and one 300 lpm line printer.

The program is approximately 450 statements in length and requires an 8K user core area.

The program uses the following special system functions: CHR$ (for manipulation of ASCII character codes) and CVT$$ (to handle upper and lower case inputs).

Recommended Usage Procedure:

This program is a tool which can be used as an aid in astronomical studies. Students should have a substantial knowledge of astronomy and plan on 15 minutes at the terminal each time the program is used.

How to Access the Program: LIB NORTON

CALIFORNIA STATE UNIVERSITY, FRESNO
Center for Information Processing

Program Name: NZYM2

Descriptive Title: A Study of Reaction Rates in Enzyme Chemistry

Applicable Field: Biochemistry

Faculty Evaluator and Rating: David E. Grubbs, Assistant Professor, Biology (3)

Origin of the Program: Huntington I Program Library

Program Description:

Educational Description: NZYM2 is a program designed to enable the user to see the effects on the rate of reaction within a system controlled by enzymes. The reaction rate will vary as the environmental conditions vary, such as PH, concentration of enzymes, and temperature. This program is appropriate for college students enrolled in chemistry and biology at the intermediate levels.

Technical Description: Program NZYM2 is written in Digital Equipment Corporation's (DEC) BASIC PLUS language and runs on a DEC PDP 11/45 computer system under the RSTSS/E (Resource-Sharing, Time-Sharing/Extended) Version 6A operating system. The computer system has a 64K word memory main frame with one RP04 disk, one TU09 tape drive, and one 300 lpm line printer.

The program is approximately 277 statements in length and requires a 7K user core area.

The program uses the following special system functions: CHR$ (for manipulation of ASCII character codes) and CVT$$ (to handle upper and lower case inputs).

Recommended Usage Procedure:

This program should be used as a supplement to classroom lecture and laboratory experiments. Knowledge of enzymes and their properties is necessary before using this program. Students should plan on spending two half-hour sessions using this program to study enzymes.

How to Access the Program: LIB NZYM2

CALIFORNIA STATE UNIVERSITY, FRESNO
Center for Information Processing

Program Name: OVHVR

Descriptive Title: Overhead Variance

Applicable Fields: Business, Cost Accounting, Production

Faculty Evaluators and Ratings: David C. Anderson, Professor, Management & Accounting (2)
Robert J. Piersol, Professor of Management (3)

Origin of the Program: Written by Darryl Johnson & Richard D'Angelo
Bentley College, 1972

Program Description:

Educational Description: This program is appropriate for college students enrolled in business courses dealing with cost analysis and production. OVHVR calculates overhead variances using the single two variance, three variance, and four variance methods for a typical production environment.

Technical Description: Program OVHVR is written in Digital Equipment Corporation's (DEC) BASIC PLUS language and runs on a DEC PDP 11/45 computer system under the RSTS/E (Resource-Sharing, Time-Sharing/Extended) Version 6A operating system. The computer system has a 64K word memory main frame with one RP04 disk, one TU09 tape drive, and one 300 lpm line printer.

The program is approximately 265 statements in length and requires an 8K user core area.

The program uses the following special system functions: CHR$ (for manipulation of ASCII character codes) and CVT$$ (to handle upper and lower case inputs).

Recommended Usage Procedure:

This program should be used as a supplement to classroom lecture and homework assignments. Students should plan on a minimum of two 15-minute sessions to use this program.

How to Access the Program: LIB OVHVR

CALIFORNIA STATE UNIVERSITY, FRESNO
Center for Information Processing

Program Name: PENFUN

Descriptive Title: Pension Fund

Applicable Field: Management

Faculty Evaluators and Ratings: David C. Anderson, Professor, Management & Accounting (2)
Robert J. Piersol, Professor of Management (3)

Origin of the Program: Written by Darryl Johnson and Richard D'Angelo
Bentley College, February 1973

Program Description:

Educational Description: PENFUN is designed for use by students enrolled in business courses which deal with pension cost. This program computes the amortization of past service pension costs.

Technical Description: Program PENFUN is written in Digital Equipment Corporation's (DEC) BASIC PLUS language and runs on a DEC PDP 11/45 computer system under the RSTS/E (Resource-Sharing, Time-Sharing/Extended) Version 6A operating system. The computer system has a 64K word memory main frame with one RP04 disk, one TU09 tape drive, and one 300 lpm line printer.

The program is approximately 205 statements in length and requires an 8K user core area.

The program uses the following special system functions: CHR$ (for manipulation of ASCII character codes) and CVT$$ (to handle upper and lower case inputs).

Recommended Usage Procedure:

This program should be used as an adjunct to classroom discussions dealing with amortization of pension costs. Two five-minute sessions will be needed to use this program as an understanding aid.

How to Access the Program: LIB PENFUN

CALIFORNIA STATE UNIVERSITY, FRESNO
Center for Information Processing

Program Name: PERT

Descriptive Title: A Program to Solve PERT (Project Evaluation and Review Technique) Networks

Applicable Fields: Management, Operations Research

Faculty Evaluators and Ratings: Mostafa Elhag, Professor, Accounting & Quantitative Methods (3)
Richard Tellier, Assoc. Professor, Management & Marketing (3)

Origin of the Program: Unknown

Program Description:

Educational Description: PERT is a computer program used to determine critical paths, variances, stacks, etc., for a network analysis. The program is appropriate for students in undergraduate college level courses in management or operations research at an intermediate or advanced level. The program requires a good knowledge of PERT applications. It does not teach the concepts but applies the algorithm to the student's data and performs the required analysis.

Technical Description: Program PERT is written in Digital Equipment Corporation's (DEC) BASIC PLUS language and runs on a DEC PDP 11/45 computer system under the RSTS/E (Resource-Sharing, Time-Sharing/Extended) Version 6A operating system. The computer system has a 64K word memory main frame with one RP04 disk, one TU09 tape drive, and one 300 lpm line printer.

The program is approximately 400 statements in length and requires an 8K user core area. There are no large data files associated with this program.

Recommended Usage Procedure:

The program should be used as an adjunct to homework assignments. A complete explanation of the use of PERT networks should precede any attempted use of the program.

How to Access the Program: LIB PERT

CALIFORNIA STATE UNIVERSITY, FRESNO
Center for Information Processing

Program Name: PHOTEL

Descriptive Title: Photoelectric Effect

Applicable Field: Physics

Faculty Evaluators and Ratings: Donald E. Holmes, Associate Professor, Physics (3)
Hugh A. Williamson, Professor, Physics (3)

Origin of the Program: Huntington I Program Library

Program Description:

Educational Description: PHOTEL is designed to simulate an experiment demonstrating the photoelectric effect by providing the user with tables of emitting current for any one of five selectable metals, where an intensity over a predetermined range of wave lengths is specified. This program is appropriate for college students at the lower division level of physics courses studying this subject.

Technical Description: Program PHOTEL is written in Digital Equipment Corporation's (DEC) BASIC PLUS language and runs on a DEC PDP 11/45 computer system under the RSTS/E (Resource-Sharing, Time-Sharing/Extended) Version 6A operating system. The computer system has a 64K word memory main frame with one RP04 disk, one TU09 tape drive, and one 300 lpm line printer.

The program is approximately 186 statements in length and requires a 5K user core area.

The program uses the following special system functions: CHR$ (for manipulation of ASCII character codes) and CVT$$ (to handle upper and lower case inputs).

Recommended Usage Procedure:

This program should be used as a supplement to laboratory experiments dealing with photoelectric effect. Students should plan on a minimum of three 15 minute sessions to practice using the program as a learning tool.

How to Access the Program: LIB PHOTEL

CALIFORNIA STATE UNIVERSITY, FRESNO
Center for Information Processing

Program Name: POLFIT

Descriptive Title: A Program to Perform Polynomial Regression Analysis

Applicable Fields: Business, Education, Psychology

Faculty Evaluator and Rating: D. Stan Mattoon, Lecturer, Accounting & Quantitative Methods (3)

Origin of the Program: Digital Equipment Computer Users Society (DECUS)

Program Description:

Educational Description: Program POLFIT performs a polynomial regression analysis of a student's data. Computer variance-covariance matrix, regression factors, and Durbin-Watson value. The program is appropriate for use by college students enrolled in upper division statistics courses at an intermediate level. The program demonstrates how regression factors vary among different sets of data.

Technical Description: Program POLFIT is written in Digital Equipment Corporation's (DEC) BASIC PLUS language and runs on a DEC PDP 11/45 computer system under the RSTS/E (Resource-Sharing, Time-Sharing/Extended) Version 6A operating system. The computer system has a 64K word memory main frame with one RP04 disk, one TU09 tape drive, and one 300 lpm line printer.

The program is approximately 350 statements in length and requires an 8K user core area. There are no large data files associated with this program.

Recommended Usage Procedure:

The program should be used to demonstrate concepts learned in the classroom. Approximately four sessions of 15 minutes each are required to run the program and to adequately cover the concepts involved. Students should be required to have a solid background in basic statistics before attempting to use this program since the instructions are somewhat inadequate.

How to Access the Program: LIB POLFIT

CALIFORNIA STATE UNIVERSITY, FRESNO
Center for Information Processing

Program Name: POLUTE

Descriptive Title: Water Polution

Applicable Fields: Biology - Ecology

Faculty Evaluator and Rating: David E. Grubbs, Assistant Professor, Biology (3)

Origin of the Program: Huntington II Program Library

Program Description:

Educational Description: POLUTE deals with the common day problem of the effects of sewage and industrial polutants on the oxygen concentration in natural bodies of water. This program is appropriate of intermediate, upper division biology courses dealing with ecology and polution.

Technical Description: Program POLUTE is written in Digital Equipment Corporation's (DEC) BASIC PLUS language and runs on a DEC PDP 11/45 computer system under the RSTS/E (Resource-Sharing, Time-Sharing/Extended) Version 6A operating system. The computer system has a 64K word memory main frame with one RP04 disk, one TU09 tape drive, and one 300 lpm line printer.

The program is approximately 450 statements in length and requires a 10K user core area.

The program uses the following special system functions: CHR$ (for manipulation of ASCII character codes) and CVT$$ (to handle upper and lower case inputs).

Recommended Usage Procedure:

This program should be used as a simulation model for studying the effects of polutants on oxygen content in water. A thorough knowledge of cause and effect are necessary before using this program. Three half hour sessions are needed to use this program for best results.

How to Access the Program: LIB POLUTE

CALIFORNIA STATE UNIVERSITY, FRESNO
Center for Information Processing

Program Name: PRBSTA

Descriptive Title: A Program to Calculate Statistical Probabilities Based on Known, Simple Probabilities

Applicable Fields: Statistics, Math

Faculty Evaluator and Rating: Marilyn Meyers, Lecturer, Accounting & Quantitative Methods* (3)

Origin of the Program: Digital Equipment Computer Users Society (DECUS)

Program Description:

Educational Description: Program PRBSTA is appropriate for college level students in beginning statistics courses. Using the program, students can learn to correctly interpret the calculated probabilities and the interrelationships of various probabilities. Some knowledge of the theory of probability is necessary before the program can be used.

Technical Description: Program PRBSTA is written in Digital Equipment Corporation's (DEC) BASIC PLUS language and runs on a DEC PDP 11/45 computer system under the RSTS/E (Resource-Sharing, Time-Sharing/Extended) Version 6A operating system. The computer system has a 64K word memory main frame with one RP04 disk, one TU09 tape drive, and one 300 lpm line printer.

The program is approximately 275 statements in length and requires an 8K user core area.

There are no large data files associated with this program.

The program uses special system function CHR$ to cause a full screen erase.

Recommended Usage Procedure:

The program can be used as an adjunct to other homework assignments. Students will only need minimal preparation.

How to Access the Program: LIB PRBSTA

* Mrs. Meyers is currently a Programmer in the Center for Information Processing

CALIFORNIA STATE UNIVERSITY, FRESNO
Center for Information Processing

Program Name: PRIMEV

Descriptive Title: Price and Quantity Variance

Applicable Field: Cost Accounting

Faculty Evaluators and Ratings: David C. Anderson, Professor, Management & Accounting (2)
Robert J. Piersol, Professor of Management (3)

Origin of the Program: Bentley College, 1973

Program Description:

Educational Description: This program is appropriate for college students enrolled in production management and cost analysis courses dealing with those variables found in producing a marketable product.

Technical Description: Program PRIMEV is written in Digital Equipment Corporation's (DEC) BASIC PLUS language and runs on a DEC PDP 11/45 computer system under the RSTS/E (Resource-Sharing, Time-Sharing/Extended) Version 6A operating system. The computer system has a 64K word memory main frame with one RP04 disk, one TU09 tape drive, and one 300 lpm line printer.

The program is approximately 394 statements in length and requires an 8K user core area.

The program uses the following special system functions: CHR$ (for manipulation of ASCII character codes) and CVT$$ (to handle upper and lower case inputs).

Recommended Usage Procedure:

This program should be used as a supplement to classroom discussion as a tool to help understand the inter-relationship of cost and production.

How to Access the Program: LIB PRIMEV

CALIFORNIA STATE UNIVERSITY, FRESNO
Center for Information Processing

Program Name: PRJCTL

Descriptive Title: Projectile Firing Simulation

Applicable Field: Physics

Faculty Evaluators and Ratings: Donald E. Holmes, Associate Professor, Physics (3)
Hugh A. Williamson, Professor of Physics (2)

Origin of the Program: Huntington I Program Library

Program Description:

Educational Description: PRJCTL is a simulation program designed for college students enrolled in lower division physics courses dealing with angle of attack and force.

Technical Description: Program PRJCTL is written in Digital Equipment Corporation's (DEC) BASIC PLUS language and runs on a DEC PDP 11/45 computer system under the RSTS/E (Resource-Sharing, Time-Sharing/Extended) Version 6A operating system. The computer system has a 64K word memory main frame with one PR04 disk, one TU09 tape drive, and one 300 lpm line printer.

The program is approximately 200 statements in length and requires an 8K user core area.

The program uses the following special system functions: CHR$ (for manipulation of ASCII character codes) and CVT$$ (to handle upper and lower case inputs).

Recommended Usage Procedure:

This program is a learning tool designed to reinforce the inter-relations of force, gravity, and angle of attack. Two or three sessions of five minutes should be used by the student to study the relationships.

How to Access the Program: LIB PRJCTL

CALIFORNIA STATE UNIVERSITY, FRESNO
CENTER FOR INFORMATION PROCESSING

Program Name: REFLECT

Descriptive Title: Reflected Light

Applicable Field: Physics

Faculty Evaluators and Ratings: Donald E. Holmes, Associate Professor, Physics (3)
Hugh A. Williamson, Professor, Physics (3)

Origin of the Program: Huntington I Program Library

Program Description:

Educational Description: This program is appropriate for college students enrolled in lower division physics courses which are studying the principles of light. REFLECT demonstrates the least time principle of reflected light and its relationship to light-path distance.

Technical Description: Program REFLECT is written in Digital Equipment Corporation's (DEC) BASIC PLUS language and runs on a DEC PDP 11/45 computer system under the RSTS/E (Resource-Sharing, Time-Sharing/Extended) Version 6A operating system. The computer system has a 64K word memory main frame with one RP04 disk, one TU09 tape drive, and one 300 lpm line printer.

The program is approximately 264 statements in length and requires an 8K user core area.

The program uses the following special system functions: CHR$ (for manipulation of ASCII character codes) and CVT$$ (to handle upper and lower case inputs).

Recommended Usage Procedure:

This program should be used as a supplement to laboratory experiments dealing with sinwaves and their characteristics. Students should plan on three fifteen-minute sessions using this program.

How to Access the Program: LIB REFLECT

CALIFORNIA STATE UNIVERSITY, FRESNO
CENTER FOR INFORMATION PROCESSING

Program Name: SALES

Descriptive Title: SALES

Applicable Field: Marketing

Faculty Evaluators and Ratings: David C. Anderson, Professor, Management & Accounting (2)
Robert J. Pierśol, Professor of Management (3)

Origin of the Program: Project Delta Business Program

Program Description:

Educational Description: SALES is appropriate for college students enrolled in business marketing courses which deal with sales. This program will print a monthly table for a salesman with his base salary, incentive dollars, and prospective billing totals (amount of sales).

Technical Description: Program SALES is written in Digital Equipment Corporation's (DEC) BASIC PLUS language and runs on a DEC PDP 11/45 computer system under the RSTS/E (Resource-Sharing, Time-Sharing/Extended) Version 6A operating system. The computer system has a 64K word memory main frame with one RP04 disk, one TU09 tape drive, and one 300 lpm line printer.

The program is approximately 167 statements in length and requires an 8K user core area.

The program uses the following special system functions: CHR$ (for manipulation of ASCII character codes) and CVT$$ (to handle upper and lower case inputs).

Recommended Usage Procedure:

This program should be used as a supplement to classroom discussion.

How to Access the Program: LIB SALES

CALIFORNIA STATE UNIVERSITY, FRESNO
Center for Information Processing

Program Name: SCORES

Descriptive Title: Test Score Analysis

Applicable Fields: All

Faculty Evaluator and Rating: D. Stan Mattoon, Lecturer, Accounting & Quantitative Methods (3)

Origin of the Program: Digital Equipment Computer Users Society (DECUS)

Program Description:

Educational Description: Program SCORES is an instructor's tool which allows analysis of up to 25 test scores. Mean, standard deviation, Z-score and T-score are calculated. Instructors should be familiar with the use of both types of score and how to apply the results.

Technical Description: Program SCORES is written in Digital Equipment Corporation's (DEC) BASIC PLUS language and runs on a DEC PDP 11/45 computer system under the RSTS/E (Resource-Sharing, Time-Sharing/Extended) Version 6A operating system. The computer system has a 64K word memory main frame with one RP04 disk, one TU09 tape drive, and one 300 lpm line printer.

The program is approximately 300 statements in length and requires a 7K user core area. There are no large data files associated with this program.

Recommended Usage Procedure:

While this program is intended as an instructor's tool, it can also be used to teach students an effective application of statistical analysis of data. If used in this manner, it would be appropriate for introductory level college courses in statistics.

How to Access the Program: LIB SCORES

CALIFORNIA STATE UNIVERSITY, FRESNO
CENTER FOR INFORMATION PROCESSING

Program Name: SLITS

Descriptive Title: Diffraction of Light

Applicable Fields: Physics

Faculty Evaluators and Ratings: Donald E. Holmes, Associate Professor, Physics (2)
Hugh A. Williamson, Professor Physics (3)

Origin of the Program: Huntington II

Program Description:

Educational Description: This program is appropriate for college students enrolled in lower division physics classes studying the diffraction of light. SLITS demonstrates, through the use of plots, interference patterns resulting from the diffraction of light.

Technical Description: Program SLITS is written in Digital Equipment Corporation's (DEC) BASIC PLUS language and runs on a DEC PDP 11/45 computer system under the RSTS/E (Resource-Sharing, Time-Sharing/Extended) Version 6A operating system. The computer system has a 64K word memory main frame with one RP04 disk, one TU09 tape drive, and one 300 lpm line printer.

The program is approximately 260 statements in length and requires a 7K user core area.

The program uses the following special system functions: CHR$ (for manipulation of ASCII character codes) and CVT$$ (to handle upper and lower case inputs).

Recommended Usage Procedure:

This program should be used as an adjunct to laboratory experiments to help understand and evaluate interference patterns of lightwaves. Students should have a basic knowledge of this subject and should spend a minimum of three five-minute sessions using this program as a learning tool.

How to Access the Program: LIB SLITS

CALIFORNIA STATE UNIVERSITY, FRESNO
CENTER FOR INFORMATION PROCESSING

Program Name: SNELL

Descriptive Title: Snell's Law

Applicable Field: Physics

Faculty Evaluators and Ratings: Donald E. Holmes, Associate Professor, Physics (4)
Hugh A. Williamson, Professor, Physics (3)

Origin of the Program: Huntington I Program Library

Program Description:

Educational Description: SNELL is designed to demonstrate Snell's Law, i.e., N1*SIN(01)=NZ*SIN(02), by providing plots which show the relationships between user-input values on N1, N2, and 01. This program is appropriate for college students enrolled in lower division physics courses.

Technical Description: Program SNELL is written in Digital Equipment Corporations's (DEC) BASIC PLUS language and runs on a DEC PDP 11/45 computer system under the RSTS/E (Resource-Sharing, Time-Sharing/Extended) Version 6A operating system. The computer system has a 64K word memory main frame with one RP04 disk, one TU09 tape drive, and one 300 lpm line printer.

The program is approximately 225 statements in length and requires a 6K user core area.

The program uses the following special system functions: CHR$ (for manipulation of ASCII character codes) and CVT$$ (to handle upper and lower case inputs).

Recommended Usage Procedure:

This program should be used as a supplement to laboratory demonstration of Snell's Law. Prior knowledge of this subject is necessary before using this program. Three sessions of five minutes should be planned on the terminal to use this program.

How to Access the Program: LIB SNELL

CALIFORNIA STATE UNIVERSITY, FRESNO
CENTER FOR INFORMATION PROCESSING

Program Name: SPACE

Descriptive Title: Effects of Velocity on Orbital Motion

Applicable Field: Physics

Faculty Evaluators and Ratings: Donald E. Holmes, Associate Professor, Physics (3)
Hugh A. Williamson, Professor, Physics (1)

Origin of the Program: Huntington I Program Library

Program Description:

Educational Description: This program is designed to determine the effects of adding a velocity increment to an orbiting body initially in an elliptic orbit. Velocity increments can only be added at the apogee or perigee of the initial orbit and only in a direction tangent to the initial orbit.

Technical Description: Program SPACE is written in Digital Equipment Corporation's (DEC) BASIC PLUS language and runs on a DEC PDP 11/45 computer system under the RSTS/E (Resource-Sharing, Time-Sharing/Extended) Version 6A operating system. The computer system has 64K word memory main frame with one RP04 disk, one TU09 tape drive, and one 300 lpm line printer.

The program is approximately 309 statements in length and requires a 7.5K user core area.

The program uses the following special system functions: CHR$ (for manipulation of ASCII character codes) and CVT$$ (to handle upper and lower case inputs).

Recommended Usage Procedure:

This program should be used as an adjunct to classroom discussion dealing with orbited bodies. Students should have a preliminary knowledge of the subject and plan on three terminal sessions to make adequate use of this program.

How to Access the Program: LIB SPACE

CALIFORNIA STATE UNIVERSITY, FRESNO
CENTER FOR INFORMATION PROCESSING

Program Name: STAT

Descriptive Title: Prints a Table of Experimental Data with Error Values, Percentage Errors, and Averages

Applicable Fields: Statistics in Business, Education, Math

Faculty Evaluator and Rating: D. Stan Mattoon, Lecturer, Accounting and Quantitative Methods (3)

Origin of the Program: Digital Equipment Computer Users Society (DECUS)

Program Description:

Educational Description: Program STAT prints a choice of either 1) a bar graph distribution; 2) a ranking by percent error; 3) a ranking by experimental value; or 4) all three. The program is appropriate for use by college students taking introductory level courses in statistics, either in business, education, or mathematics. The program demonstrates how the different methods of ranking compare. No particular statistical background is required to use this program.

Technical Description: Program STAT is written in Digital Equipment Corporation's (DEC) BASIC PLUS language and runs on a DEC PDP 11/45 computer system under the RSTS/E (Resource-Sharing, Time-Sharing/Extended) Version 6A operating system. The computer system has a 64K word memory main frame with one RP04 disk, one TU09 tape drive, and one 300 lpm line printer.

The program is approximately 400 statements in length and requires an 8K user core area. There are no large data files associated with this program.

Recommended Usage Procedure:

The program can best be used in a beginning statistics course to introduce students to the computer. Approximately one-half hour outside the classroom is required.

How to Access the Program: LIB STAT

CALIFORNIA STATE UNIVERSITY, FRESNO
CENTER FOR INFORMATION PROCESSING

Program Name: STAT1

Descriptive Title: A Program to Calculate the Comparative Mean, Variance, Standard Error, and t-ratio

Applicable Fields: Business, Math, Psychology, Sociology

Faculty Evaluator and Rating: Marilyn Meyers, Lecturer, Accounting & Quantitative Methods (3) *

Origin of the Program: Digital Equipment Computer Users Society (DECUS)

Program Description:

Educational Description: Program STAT1 gives measures of dispersion and also does a comparison of groups. The program is appropriate for first or second semester college level courses in statistics. It enables students to apply learned concepts without manual data manipulation. Students should have some background in using statistical means and measures of dispersion before using the program.

Technical Description: Program STAT1 is written in Digital Equipment Corporation's (DEC) BASIC PLUS language and runs on a DEC PDP 11/45 computer system under the RSTS/E (Resource-Sharing, Time-Sharing/Extended) Version 6A operating system. The computer system has a 64K word memory main frame with one RP04 disk, one TU09 tape drive, and one 300 lpm line printer.

The program is approximately 232 statements in length and requires a 6K user core area. There are no large data files associated with this program.

Recommended Usage Procedure:

The program can be assigned as an optional supplement to other homework assignments. Depending on how the instructor requests the students to use the program, a lot of time would have to be spent gathering data. If the instructor provides test data, use of the program would only require about an hour.

Students probably will not understand the use of the t-ratio unless time is spent in the classroom covering that particular topic beforehand. There may also be some difficulty in understanding the mean difference, the variance of difference, and the standard error of difference. These topics should be discussed before any assignments are made to run the program.

How to Access the Program: LIB STAT1

*Mrs. Meyers is currently a Programmer in the Center for Information Processing

CALIFORNIA STATE UNIVERSITY, FRESNO
CENTER FOR INFORMATION PROCESSING

Program Name: TAG

Descriptive Title: Population Survey Based on Tagging

Applicable Field: Biology

Faculty Evaluator and Ratings: David E. Grubbs, Assistant Professor, Biology (3)

Origin of the Program: Huntington I Program Library

Program Description:

Educational Description: TAG is designed as a survey of a bass population in a simulated farm pond using tagging and recovery techniques to estimate population size. This program is appropriate for students in lower division biology which deals with population growth and observation techniques.

Technical Description: Program TAG is written in Digital Equipment Corporation's (DEC) BASIC PLUS language and runs on a DEC PDP 11/45 computer system under the RSTS/E (Resource-Sharing, Time-Sharing/Extended) Version 6A operating system. The computer system has a 64K word memory main frame with one RP04 disk, one TU09 tape drive, and one 300 lpm line printer.

The program is approximately 300 statements in length and requires an 8K user core area.

The program uses the following special system functions: CHR$$ (for manipulation of ASCII character codes) and CVT$$ (to handle upper and lower case inputs).

Recommended Usage Procedure:

This program should be used as a demonstration of a population estimating technique. Students should plan on spending three half-hour sessions using this program.

How to Access the Program: LIB TAG

CALIFORNIA STATE UNIVERSITY, FRESNO
CENTER FOR INFORMATION PROCESSING

Program Name: WAVES

Descriptive Title: Sin Wave Analysis

Applicable Field: Physics

Faculty Evaluators and Ratings: Donald E. Holmes, Associate Professor, Physics (3)
Hugh A. Williamson, Professor, Physics (3)

Origin of the Program: Huntington I Program Library

Program Description:

Educational Description: This program is appropriate for college students enrolled in low division physics courses studying the effects of changing wavelength, amplitude, and phase on two sin waves and on their sum or super-position.

Technical Description: Progra WAVES is written in Digital Equipment Corporation's (DEC) BASIC PLUS language and runs on a DEC PDP 11/45 computer system under the RSTS/E (Resource-Sharing, Time-Sharing/Extended) Version 6A operating system. The computer system has a 64K word memory main frame with one RP04 disk, one TU09 tape drive, and one 300 lpm line printer.

The program is approximately 179 statements in length and requires a 5K user core area.

The program uses the following special system functions: CHR$$ (for manipulation of ASCII character codes) and CVT$$ (to handle upper and lower case inputs).

Recommended Usage Procedure:

This program should be used as a supplement to laboratory experiments dealing with sinwaves and their characteristics. Students should plan on three fifften-minute sessions using this program.

How to Access the Program: LIB WAVES

INDEX OF PROGRAMS BY DISCIPLINE

	Page
Accounting	
BALSHT	7
BUDGET	10
MARKET	35
MKBUY	37
PRIMEV	50
SCORES	54
Biology	
LOCKEY	33
NZYM2	42
POLUTE	48
TAG	60
Business Statistics	
ANVAR3	4
ANVAR4	5
CHISQS	14
CORMAT	15
CURFIT	16
DEPCOM	20
INSTMT	25
LINFIT	29
LINPRO	30
LNREG1	31
LNTRND	32
OVHVR	43
PENFUN	44
POLFIT	46
PRBSTA	49
SCORES	54
STAT	58
STAT1	59
Chemistry	
BOND	8
CALORI	11
CEMGEN	12
MOLE	39
SCORES	54
Economics	
MARKET	35
SCORES	54

	Page
Education	
ANIMAL	3
ANVAR3	4
ANVAR4	5
POLFIT	46
SCORES	54
STAT	58
Engineering	
LPFLTR	34
Finance	
MKBUY	37
History	
ELECT1	21
ELECT2	22
SCORES	54
Home Economics	
DAYREQ	17
MNIDIT	38
Management	
ADSIM	1
ASSIGN	6
GCPTH	24
LEASE	27
MARKET	35
MKBUY	37
PERT	45
SCORES	54
Marketing	
MARKET	35
SALES	53
SCORES	54

Index of Programs by Discipline (continued)

Mathematics

CHISQS	14
CORMAT	15
CURFIT	16
LINFIT	29
LINPRO	30
LNREG1	31
PRBSTA	49
SCORES	54
STAT	58
STAT1	59

Operations Research

ASSIGN	6
GCPTH	24
PERT	45
SCORES	54

Physics

BOUNCE	9
CALORI	11
CHARGE	13
DECAY1	18
DECAY2	19
KINEMA	26
LENS	28
NEWTN2	40
NORTON	41
PHOTEL	46
PRJCTL	51
REFLECT	52
SCORES	54
SLITS	55
SNELL	56
SPACE	57
WAVES	61

Political Science

ELECT1	21
ELECT2	22
SCORES	54

Psychology

ANVAR3	4
ANVAR4	5
CHISQS	14
CORMAT	15
ELIZA	23
LNREG1	31
POLFIT	46
SCORES	54
STAT1	59

Sociology

CORMAT	15
LNREG1	31
SCORES	54
STAT1	59

INDEX OF PROGRAMS BY LEVEL OF DIFFICULTY

Introductory or Freshman Level Courses

Accounting	Page
BALSHT	7
MARKET	35

Biology	
TAG	60

Business Statistics	
CHISQS	14
PRBSTA	49
STAT	58
STAT1	59

Chemistry	
BOND	8
CALORI	11
CEMGEN	12
MOLE	39

Economics	
MARKET	35

Education	
ANIMAL	3
STAT	58

History	
ELECT1	21
ELECT2	22

Home Economics	
DAYREQ	17
MNIDIT	38

Management	
MARKET	35

Marketing	
MARKET	35

Mathematics	
CHISQS	14
PRBSTA	49
STAT	58
STAT1	59

Physics	
CALORI	11
NEWTN2	40
PRJCTL	51
REFLECT	52
SLITS	55
SNELL	56
SPACE	57
WAVES	61

Political Science	
ELECT1	21
ELECT2	22

Psychology	
CHISQS	14
STAT1	59

Sociology	
STAT1	59

Intermediate, Sophomore or Junior Level Courses

	Page
Accounting	
MKBUY	37
PRIMEV	50
Biology	
LOCKEY	33
NZYM2	42
POLUTE	48
Business Statistics	
ANVAR3	4
ANVAR4	5
CORMAT	15
CURFIT	16
DEPCON	20
INSTMT	25
LINFIT	29
LINPRO	30
LNTRND	32
OVHVR	43
PENFUN	44
POLFIT	46
Education	
ANVAR3	4
ANVAR4	5
POLFIT	46
Engineering	
LPFLTR	34
Finance	
MKBUY	37
Management	
ADSIM	1
ASSIGN	6
GCPTH	24
LEASE	27
MKBUY	37
PERT	45
Marketing	
SALES	53
Mathematics	
CORMAT	15
CURFIT	16
LINFIT	29
LINPRO	30
Operations Research	
ASSIGN	6
GCPTH	24
PERT	45
Physics	
BOUNCE	9
CHARGE	13
DECAY1	18
DECAY2	19
KINEMA	26
LENS	28
NORTON	44
Psychology	
ANVAR3	4
ANVAR4	5
CORMAT	15
ELIZA	23
POLFIT	46
Sociology	
CORMAT	15

More Advanced Undergraduate Courses

	Page
Accounting	
BUDGET	10
Business Statistics	
LINPRO	30
LNREG1	31
Mathematics	
LINPRO	30
LNREG1	31
Physics	
NORTON	41
Psychology	
ELIZA	23
LINPRO	30
LNREG1	31
Sociology	
LINPRO	30
LNREG1	31

Programs for use Primarily by Instructors

All Disciplines	
SCORES	54

INDEX OF PROGRAMS BY ORIGIN

Page

Digital Equipment Computer Users Society (DECUS)

ANIMAL 3
ANVAR3 4
ANVAR4 5
ASSIGN 6
BALSHT 7
BOUNCE 9
BUDGET 10
CALORI 11
CEMGEN 12
CHISQS 14
CORMAT 15
GCPTH 24
LNREG1 31
MARKET 35
MKBUY 37
POLFIT 46
PRBSTA 49
SCORES 54
STAT 58
STAT1 59

California State University, Fresno

ADSIM 1

Bentley College

LEASE 27

OVHVR 43

PENFUN 44

PRIMEV 50

Hewlett-Packard

LPFLTR 34

Huntington Program Library

CHARGE 13

DECAY1 18

DECAY2 19

LENS 28

NEWIN2 40

NZYM2 42

PRJCTL 51

ITS

LINPRO 30

Project Delta

CURFIT 16

DEPCOM 20

INSTMT 25

SALES 53

Jack Rhine, San Francisco State University

DAYREQ 17

MNIDIT 38

Unknown

BOND 8
ELECT1 21
ELECT2 22
KINEMA 26
MOLE 39
PERT 45

Lawrence Hall of Science - UC Berkeley

ELIZA 23

APPENDICES

APPENDIX A

LIST OF PROGRAMS EVALUATED BUT NOT DOCUMENTED

The following programs were found to be of some value but were not rated sufficiently high to be fully documented:

Program Name	Evaluations Evaluator	Rating	Major Discipline
ANNUI2	G. Johnston	2	Finance
ANVAR1	M. Meyers	2	Statistics
ANVAR2	M. Meyers	2	Statistics
ATWT	D. Zellmer	2	Chemistry
	S. Ziegler	2	
AVOGA	D. Zellmer	1	Chemistry
	S. Ziegler	2	
BDAVAL	G. Johnston	2	Finance
BYIELD	G. Johnston	2	Finance
CHISQ	M. Meyers	2	Statistics
DEPRE	D. Anderson	2	Management
	R. Piersol	3	
EMPIR	D. Zellmer	2	Chemistry
	S. Ziegler	2	
EQUIL1	D. Zellmer	2	Chemistry
	S. Ziegler	2	
EQUIL2	D. Zellmer	2	Chemistry
	S. Ziegler	2	
EXSMOO	R. Tellier	2	Operations Res
	M. Elhag	3	
FREQ	S. Mattoon	2	Statistics
GCPM1	R. Tellier	2	Operations Res
	M. Elhag	2	
GEOMEN	M. Meyers	2	Statistics
GIRRPV	G. Johnston	2	Finance

Program Name	Evaluations Evaluator	Rating	Major Discipline
GKASSF	G. Johnston	2	Finance
GRGPLT	S. Mattoon	2	Statistics
GTHOR	G. Johnston	2	Finance
INOUT	R. Tellier	2	Operations Res
	M. Elhag	3	
KINET	D. Zellmer	1	Chemistry
	S. Ziegler	2	
MASSD	D. Zellmer	2	Chemistry
	S. Ziegler	2	
PERCENT	D. Zellmer	2	Chemistry
	S. Ziegler	1	
PHICOE	M. Meyers	2	Statistics
PHPOH	D. Zellmer	2	Chemistry
	S. Ziegler	2	
POLICY	S. Mattoon	2	Simulations
RANDOM	S. Mattoon	2	Statistics
SALMAN	D. Anderson	2	Marketing
	R. Piersol	2	
STAT3	M. Meyers	2	Statistics
STOICH	D. Zellmer	2	Chemistry
	S. Ziegler	2	
WALDS	S. Mattoon	2	Statistics

These programs can be accessed by typing the word LIB followed by the program name; for example, LIB LEASE.

APPENDIX B

PROGRAMS WHICH HAVE NOT YET BEEN EVALUATED

Finance

ANNUITT
BDAMRT
BNDPRC
BNDYLD
BNKRSV
CAPINV
CASHFL
ECONMY
EQUITY
EXDRSK
FINFLO
GKCOST
GMRGB
GNMRVB
GNPSUM
GRISKA
GVOTE
INACNT
LABOR
LEASIN
LENDER
LESSEE
LOAN
MARKOW
MORGAG
ONIONS
RATIO
SAVING
STKINC
STKRTN
STKVAL
TRUINT

Statistics

CONLM1
LNTRND
LPHELP
LSTAR
LSTEXP
REGCOR
TVALUE

Physics

BFIELD
BFIEL1
CLOUDS
PHOTON
PLANCK
SCATR1
SPCTRA
SPRING
VELEC
VFIELD
VLOCTY

Miscellaneous

BRAIN
BRAIN1
FAST
FIX
EPRUN
GRADER
HELPER
IATA1
INRAN
OUTRAN
ROBOT
ROBOT1
SUNSET
TRCK1
WHEELS

Engineering

ACNODE
ANLAD
ANALOG
BACT2L
BEAMS
BEMDFS
COGO
DEBYE
ESTABR
HTXFT
LQVALV
MICRO
MIXSPR
TMCEV
TMFCEV

Mathematics

ALP
BASE
BESSEL
BITEST
CALC
CALC2
CDETER
CIRCLE
CONVRT
CROUT1
CRVLEN
CXARTH
CXEXP
DATPLT
DERIV
DETERM
DEQFO
DE1OR
DE2OR
DQEOF2
EUCLID
FACTOR
FACTRL
FINAL
FLIP
FNCTS
FNTPLT
FRACAD
FRACDV
FRAC,T
GAUSS
GCF
GFFT
GINTLP
GLPSA1
GSIMEQ
HPPLOT
IMPROP
INTGRT
INTRO
INVRSE
LCM
LRGNUM
LITRBLD
LITRPLT
ORTHOG
PFNPLT
PLOT
PLOTIO
POLY
PSFNPL
RATIO
REDUCE
ROMINT
ROOTFR
ROOTS
ROTATE
SETS
SFNPLT
SIMEQN
SOLVIT
SPHERE
SQRS
SQRZ
SQUARZ
STOPB
UNCDEN
UNRDCE
EXPLOT

Computer Science

ADDRTS
CSMCOM
CSMCON
CSMHEL
CSMLIS
CSMOLD
CSMP
CSMRUN
CSMSAV
GSSS
RTSBLD
RTSNAM
SADSM
SLIST
S1311R
S14PAT
S1401
TABLE
XREF
XREF1

Games

ACEYDU
ADVICE
AMAZIN
AWARI
BAGLES
BIG6
BIORYT
BIRTH
BOMBER

Games (continued)

BOWL
BOXING
BUG
BULCOW
BULEYE
BUNNY
BUZZWD
CAIADD
CAREER
CHANGE
CHEKER
CHIEF
CHOMP
CRAPS
CUBE
CUKALK
DATED
DATING
DEFUSE
DIAMND
DIGIT
DRINKD
EVEN
FLPFOP
FOOTBL
FOTBAL
FURS
GEOWAR
GOLF
FOMOKO
GUESS
GUNER1
GUNNER
HANG
HILO
HIQ
HMRABI
HOCKEY
HORSES
HURKLE
KENO
KINEMA
KING
KINGDM
LEM
LETTER
LIFE
LIFE2
LITQZ
MADLIB
MAGIC
MATHDI
MONPLY
MUGWMP
MYCROF
NICOMA
NIM
PASCAL
PATHWY
PICTUR
PIZZA
POET
POETRY
POKER
PONG
REVRSE
ROCKET
ROCKSP
ROCKT1
ROTATE
ROULET
RUSROU
SALVO
SALVO1
SAVEHO
SEAWAR
SHRINK
SLOTS
SMOG
SNOOPY
SPLAT
STAR
STARS
STOCK
SYNONM
TARGET
TENNIS
THEORM
TICTAC
TITLES
TOWER
TRAIN
TRAP
TREK
TVPLOT
UGLY
WEKDAY
WORD
WUMPUS
23 MTCH
3DPLOT

Biology

EVOLU
GENES
HARDY
MEMBR
MITOCN
NZYMC
POP

All of these programs can be accessed by typing LIB followed by the program name.

APPENDIX C

FACULTY EVALUATORS

David C. Anderson, Professor, Management and Accounting, CSUF

Mostafa Elhag, Professor, Accounting and Quantitative Studies, CSUF

Alfred B. Evans, Associate Professor, Political Science, CSUF

David E. Grubbs, Assistant Professor, Biology, CSUF

J. Dennis Hagopian, Lecturer in Engineering, CSUF

Donald E. Holmes, Associate Professor, Physics, CSUF

Kandiah Jeyapalan, Associate Professor, Engineering, CSUF

Gerald L. Johnston, Assistant Professor, Accounting & Quantitative Studies, CSUF

George S. Leavitt, Professor, Psychology, CSUF

D. Stan Mattoon, Lecturer, Accounting and Quantitative Studies, CSUF

Marilyn L. Meyers, Lecturer, Accounting and Quantitative Studies, CSUF*

Edward E. Nelson, Associate Professor, Sociology, CSUF

Terry G. Newell, Associate Professor, Psychology, CSUF

Ratana S. Newsome, Professor of Home Economics, CSUF

Robert J. Piersol, Professor of Management, CSUF

Lanny J. Ryan, Lecturer, Management and Marketing, CSUF

Richard D. Tellier, Associate Professor, Management and Marketing, CSUF

Hugh A. Williamson, Professor, Physics, CSUF

David L. Zellmer, Associate Professor, Chemistry, CSUF

Stanley M. Ziegler, Professor, Chemistry, CSUF

* Mrs. Meyers is currently a Programmer in the Center for Information Processing, CSUF

APPENDIX D

COURSEWARE PROGRAMMERS

John Bengtson

Lauren Burchette

Bosco Dias

Gwen Gee

Ray Gretlein

Craig Hauschildt

Nguyen Khai

Marilyn Meyers

David Moor

Carol Moore

Judy Mosqueda

Deborah Patrick

Michael Watts

James Weeks